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The OIL and GAS JOURNAL

PRODUCING REFINING ENGINEERING MARKETING

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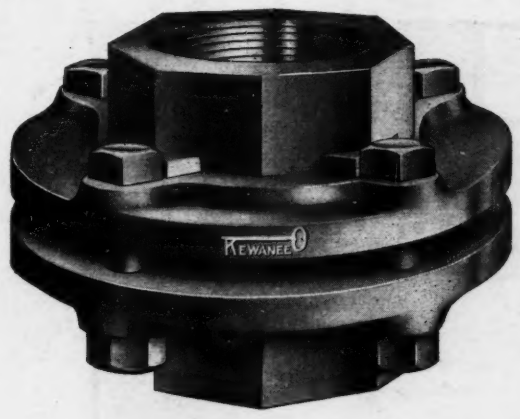
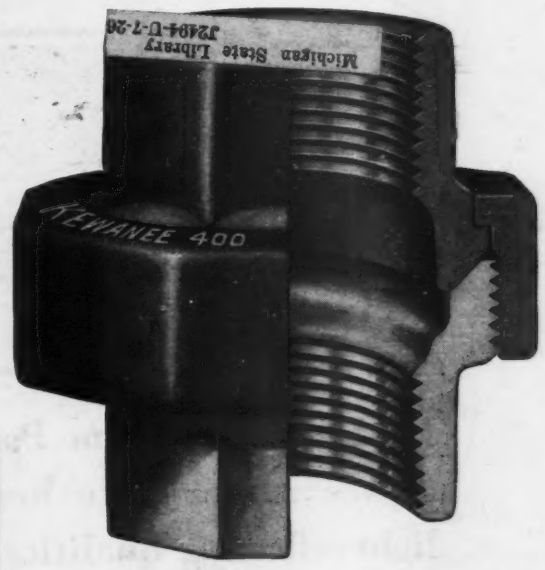


KEWANEE Flange Union



KEWANEE 400

TWO GOOD UNIONS

The Kewanee Flange Union construction insures a very good compact fitting, light in weight, with extreme strength and rigidity.

These unions are made entirely of the highest grade malleable iron, with the exception of the seat which is rolled-in brass. The ground joint seat of iron to brass eliminates use of a gasket.

All Kewanee Flange Unions are individually tested, and a union not absolutely tight is rejected.

The Kewanee Flange Union is suitable for service at 200 lbs. Working Steam Pressure and 300 lbs. Oil, Water or Gas Pressure.

The famous three-piece principle of the Kewanee Union, and the forged bronze to forged steel noncorroding joint are retained.

The old malleable iron ring has been replaced by a forged steel ring so that the thread connection, also, is now forged bronze to forged steel, which gives the "Kewanee 400" increased strength and resistance to high pressures.

Sizes ⅛" to 2" are recommended for 400 lbs. Working Steam Pressure at 500 deg. F.

AIR TESTED UNDER WATER

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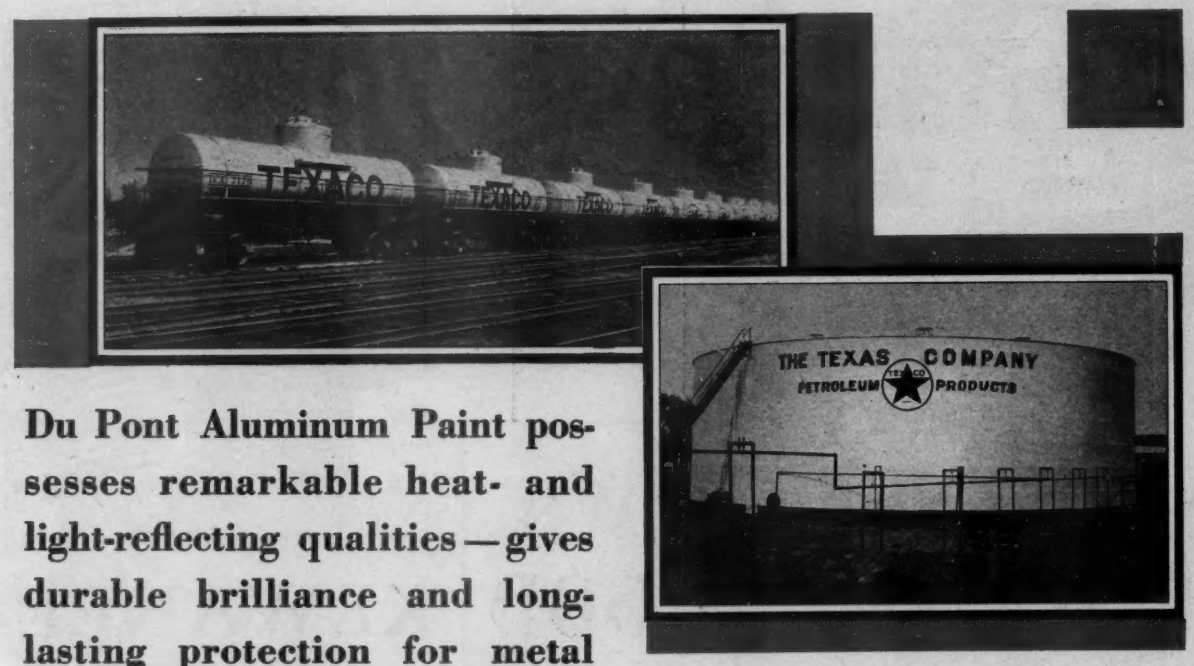
Minimize your "breather losses"– cut paint maintenance costs

. . . with this perfected paint for tanks



Du Pont Aluminum Paint possesses remarkable heat- and light-reflecting qualities—gives durable brilliance and long-lasting protection for metal

THE relatively high value of aluminum paint in preventing volatile losses, combined with its durability, has led to widespread use of this type of paint for oil tanks and tank cars.

Today, du Pont offers the Petroleum Industry aluminum paint systems specifically designed to meet the adverse conditions of oil-field use.

Du Pont Aluminum Paint gives high heat- and light-reflecting brilliance that means maximum efficiency in the storage of oil, *throughout the life of the paint coat.*

Due to its unusual resistance to the action of sunlight, moisture and gases, du Pont Aluminum Paint has shown, in both field and laboratory tests, a durability 20% to 50% greater than that of most white paints. It affords substantial economies in paint up-keep.

Easy to apply; very stable in leafing efficiency, brilliance and suspension and highly satisfactory in hiding the primary coat—du Pont Aluminum Paint has introduced new standards of paint efficiency and economy for tank cars and tank storage in the Petroleum Industry.

Full information on du Pont Aluminum Paint and other du Pont products designed especially for the Petroleum Industry will be sent on request. If your problem requires special study, we will be glad to send you a du Pont technical representative to work with you.

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DODGE
Oil Well Countershafts

TIMKEN BEARING EQUIPPED

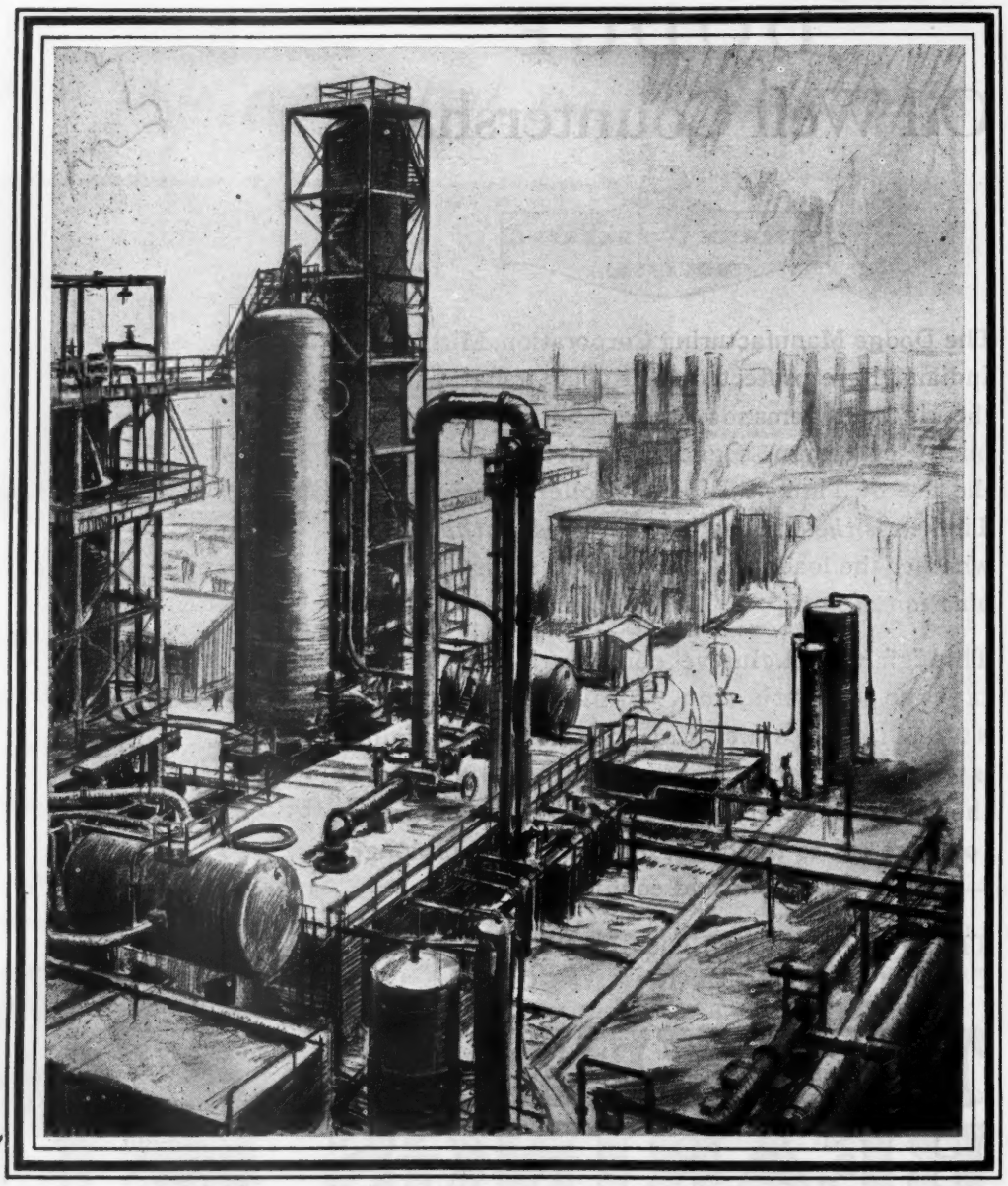
The Dodge Manufacturing Corporation, Mishawaka, Indiana, have protected their countershafts against the rigorous demands of oil field service by simplicity of design, ruggedness of construction and the use of Timken Tapered Roller Bearings—for Timken is *the one bearing that does all things well,* whether the loads are all *radial,* all *thrust or a combination of both.*

Through the exclusive combination of Timken tapered construction, Timken *POSITIVELY ALIGNED ROLLS* and Timken steel, bearing failure is eliminated; frictional power loss is reduced to the vanishing point; lubricant is saved; maintenance costs are cut to the bone; machine life is prolonged —in all types of oil field equipment.

THE TIMKEN ROLLER BEARING COMPANY
C A N T O N, O H I O

TIMKEN *Tapered Roller* **BEARINGS**

The Oil and Gas Journal, issued weekly by The Petroleum Publishing Company, 114-116 West Second Street, Tulsa, Oklahoma. Subscription price $6.00 a year; 15 cents a copy. Entered as second-class mail matter December 16, 1911, at the post office at Tulsa, Okla., under the Act of March 3, 1879.



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In the refining fields of America and foreign countries, Kellogg refineries are uniformly successful in meeting widely varied demands. From design to demonstration, Kellogg Service is complete, and reflects the value of close cooperation with the refiner.

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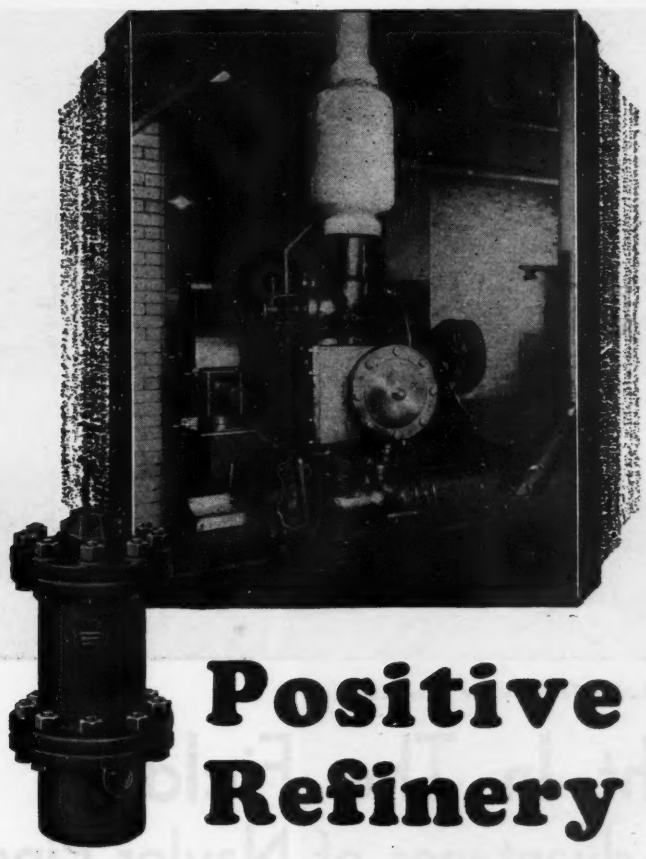

No. 2S Armstrong Trap giving dependable protection to a steam engine connected to generator set. This model trap is designed for operation under pulsating pressure.

Positive Protection for Refinery Steam Engines

FOR SAFE and efficient operation of your steam engines, condensate must be completely and automatically removed from the steam headers without the loss of live steam.

You can provide the most dependable protection for your steam engines and at the same time insure efficient, troubleless drainage of condensate by putting Armstrong Steam Traps on the job.

Armstrong Traps not only drain condensate effectively—they discharge any air that tends to accumulate and are not put out of order by dirt, scum, oil and other impurities that find their way into a steam line.

Armstrong Steam Traps are made in types and sizes for all condensate drainage purposes up to 900 lb. pressures and 750 deg. F. temperatures.

Our liberal sales policy enables you to test an Armstrong Trap for 3 months to help you judge its merits before making a purchase.

ARMSTRONG MACHINE WORKS

368 Maple Street, Three Rivers, Mich.

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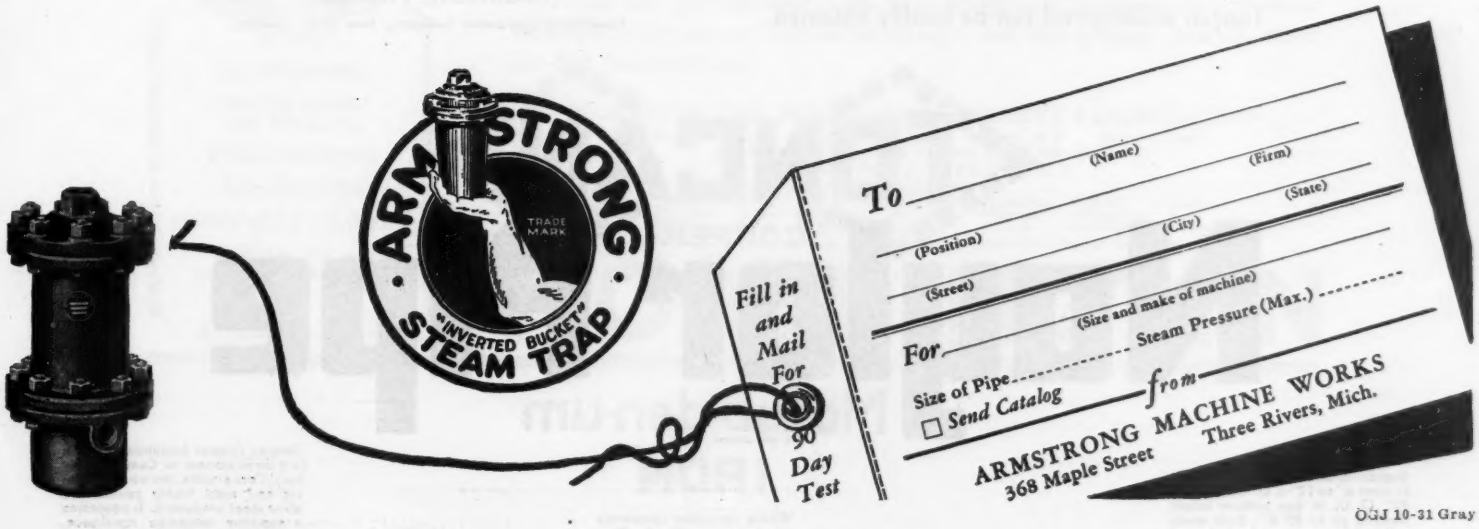

OGJ 10-31 Gray

Welding 14" Naylor Pipe on gas line laid in Texas by The Cabot Company.

Easily Welded—Right In The Field
. . . One of the Advantages of Naylor Pipe

FAST laying comes from quick welding. And the faster the line can be put in, the cheaper the costs.

Naylor Pipe is readily welded—right on the job.

Here are a few of the reasons why:

1. Toncan Iron—of which Naylor Pipe is made—is the finest welding material. (This is the opinion of a leading manufacturer of welding equipment.)
2. Because of its light weight (Naylor Pipe weighs 50% less than standard weight wrought pipe) it cuts and welds easier and quicker.
3. It is perfectly round anywhere in its length.
4. No special equipment is required to weld Naylor Pipe. It can be easily welded on skids. Toncan welding rod can be readily obtained.

These advantages make for greater speed in welding . . . . faster and cheaper laying. Think of them on your next pipe line.

Naylor Pipe will reduce your pipe line costs.

NAYLOR PIPE COMPANY

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TONCAN COPPER
Naylor Pipe
Mo-lyb-den-um IRON

Standardized Naylor Pipe is made in sizes 6" to 12" I. D. and 14" to 20" O. D. in any uniform length desired up to 40' 0". Ends made to wrought pipe standards for all types of coupling.

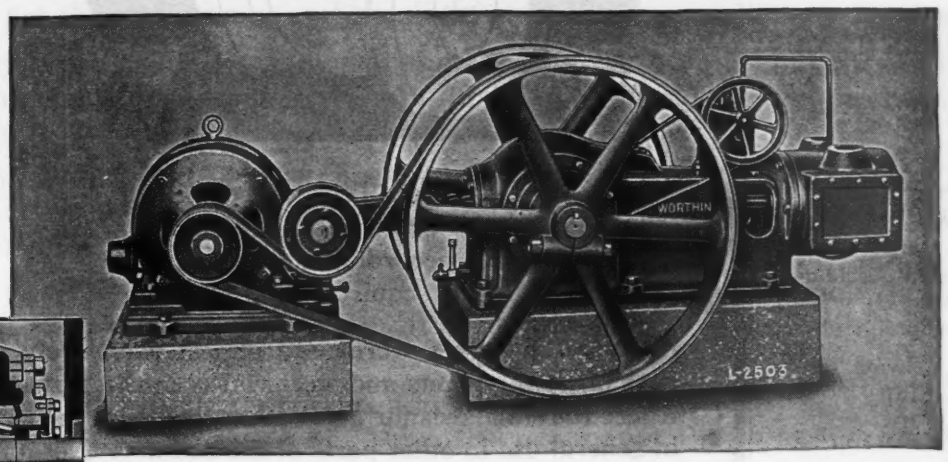
Where corrosion resistance is not a factor, Naylor Pipe can be furnished in steel.

Toncan Copper Molybdenum Iron is a development of Central Alloy Steel Corporation, the world's largest and most highly specialized alloy steel producers. It possesses a superior corrosion resistance, making it the favored pipe material.

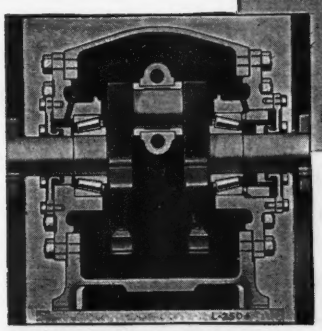
Now... TIMKEN BEARING EQUIPPED

Worthington Horizontal Compressors

. . . 6-inch and 9-inch stroke



Timken Bearings require no adjustment for years . . . an important feature for the compressor user whose equipment is attended by unskilled operators



Timken Roller Bearing mounting on crankshaft journals

COMPRESSOR users will readily appreciate the significance of this announcement . . . it means that they can now have the reliability and efficiency of Worthington Feather Valve Compressors in combination with the economy, carefree operation and other well-known advantages of Timken Roller Bearings.

This equipment is available in sizes employing 6-inch and 9-inch stroke, in capacities of 100 to 300 cu. ft. per minute.

The adoption of Timken Bearings is evidence of Worthington's policy of incorporating, in all of its products, those features of construction which mean increased satisfaction to the user.

If you are not familiar with Worthington Compressors and their numerous features of advanced design, ask the nearest branch office for full information.

WORTHINGTON

PUMPS
COMPRESSORS
CONDENSERS *and* Auxiliaries
DIESEL ENGINES
GAS ENGINES
FEEDWATER HEATERS
WATER, OIL *and* GASOLINE METERS

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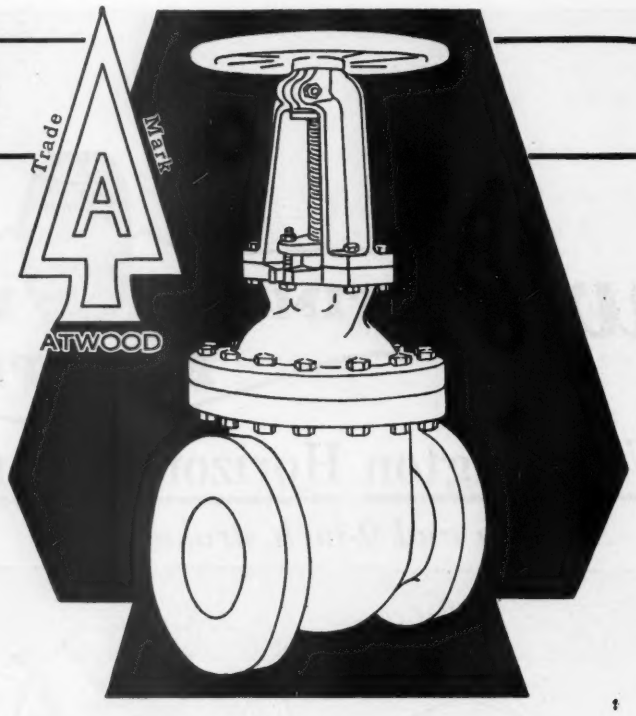
ATWOOD VALVES

for every Service,



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ATWOOD High Tensile Iron, Electric Steel, Forged Steel or Bronze Bodies—according to service required.

ATWOOD Valves were used almost exclusively in the early days of power plants and steel works in the Pittsburgh district, where the standards for given pressures were heavier than those in general use in other parts of the country. Not only a pioneer in this important phase of industry, this company has chosen to remain in front where Progress and Achievement are concerned.

Today the ATWOOD A Trademark by reason of research and development apace with engineering advances, is an asset far more valuable than our plant and machinery. The most advanced type of valve to meet every service condition is listed in the Atwood line. Besides . . . *to meet unusual and extreme conditions* . . . our Engineering Department has designed special valves up to 72″ diameter, and for pressure as high as 3000 pounds.

Motor, Cylinder, Hydraulic or Gear operated.

Stainless Steel, Bronze or Monel Mountings, according to service required.

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A LETTER FROM HARRY G. NYE

TO THE OIL MEN OF THE U. S. A.

"THE LIGHTWEIGHT CHAMPION"

FELLOW CITIZENS:

In the pugilistic profession, which is the college name for the science of sock, it is the heavyweights who get the big money and the lightweights who really put on the show.

A couple of piano movers push each other around a ring for awhile and then go downstairs and split a million dollars, that the rest of us have paid in in the hope that at least one big guy is going to get his.

He does, but he gets it in the form of a check instead of a wallop in the puss. Then he goes away somewhere where he can laugh and not be heard. This is possible. But when he eats, that's different.

Meanwhile, what do the lightweights split? Six hundred and eighty-nine dollars and eleven cents, and at least one nose, a couple of ears, and four or five eyebrows—if it is a good house.

Both heavyweights and lightweights run to and fro when they are in the ring, the only difference being that the lightweights always run to and the heavyweights run fro.

PATENTS PENDING

Yes, sir, I'm partial to lightweights. When they hit you it's no accident, although you feel like you had been in one. But if a heavyweight hits another heavyweight, they expel him.

But no wonder I like 'em. The LIGHTWEIGHT CHAMPION of the world grew up right here in the Nye Tool & Machine Works. And, what's more, he never lost a fight.

His name is No. 50, and he got the decision from the oil men of America over every other portable pipe threading machine they ever heard of, if any.

If you are going to get a lightweight portable pipe machine, why not get the new Nye No. 50, the lightweight champion? It's just as easy, just as cheap—maybe more so.

HARRY G. NYE

Otherwise Known As

NEW NYE No. 50

POWER PIPE THREADING MACHINE
THREADS, CUTS OFF AND REAMS
CAPACITY ½ TO 2 INCHES

The Nye Tool & Machine Works
4120-30 Fullerton Avenue Chicago, Ill.

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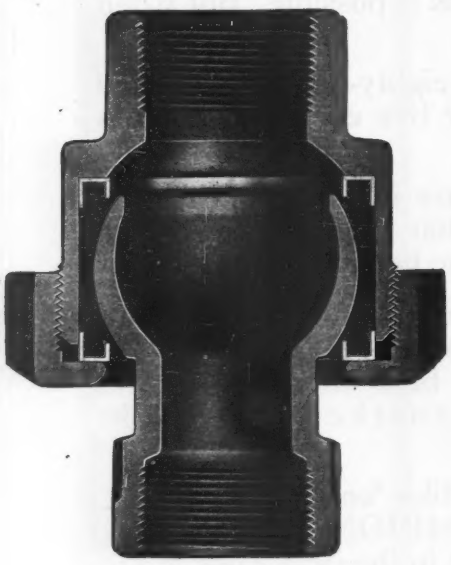
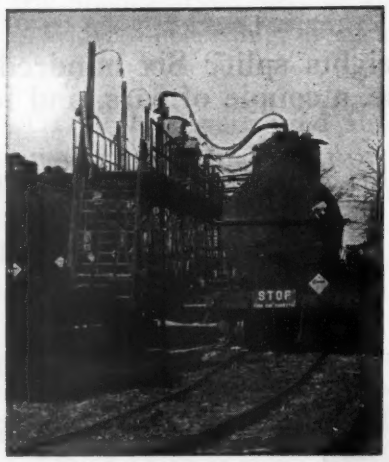
1,000,000 flexible joints say: "BARCOS don't leak"!

OVER a million Barco flexible joints in use testify to their remarkable freedom from leakage.

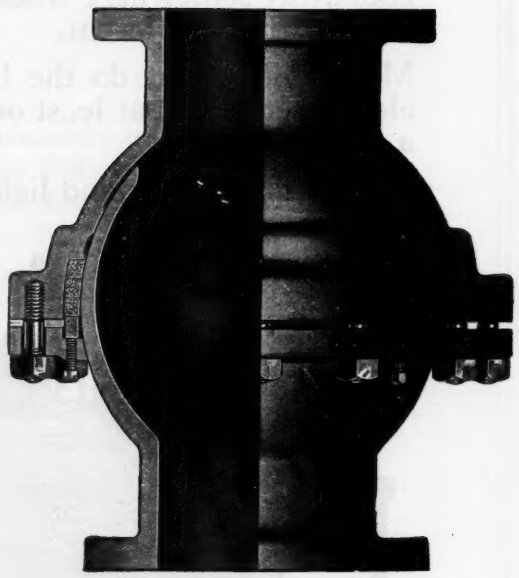
The ball joint and double gasket design combines long life with great flexibility. Joint maintenance—which usually determines whether joints are assets or liabilities—is reduced to a minimum.

Barcos are in wide use in the oil industry for handling steam line expansion; on loading racks; on drain pipes serving floating tank roofs, etc. Write for latest catalog.





Barco Flexible Joints and Plug Valves —a most satisfactory combination— on loading rack service.



Barco Manufacturing Company

1801 Winnemac Avenue, Chicago, Illinois

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BARCO Valves and Joints

OGJ 10-21 Gra

Allis-Chalmers Oil Well Motor, Control and Single Reduction Unit Operating Pumping Rig in Forsan Field, Howard County, Texas.

Less Chance for Trouble *with these* Texrope Driven Units

Products for the Oil Industry

Single and Double Reduction Units
Texrope Drives
Motors and Control
Drilling-Pumping-Pipeline
Transformers
Centrifugal Pumps
Pipe Line Pumps
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OIL FIELD OFFICES

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DISTRIBUTORS

of Motors, Control, Texrope Drives and Reduction Units.

WESTERN SUPPLY CO., Tulsa
HAYWOOD WILLIAMSON CO. Shreveport, La. (Also Centrifugal Pumps)
BRIDGEPORT MACHINE CO. Wichita, Kan. (Also Centrifugal Pumps and Transformers)

ALLIS-CHALMERS single reduction units are not a solution to all of an oil well operator's troubles but they do cut them down a great deal. A short center, nonslipping Texrope Drive takes the place of the long troublesome belt drive from the motor to the countershaft. The Timken equipped countershaft is built strong enough to withstand the shocks of pumping or drilling. Universal slide rails provide easy adjustment of motor on the base and cross-rails permit a take-up of 48″ in the band wheel belt. These features are combined to form a unit that is strong and yet is light enough to be readily moved from one well to another. There is little to get out of adjustment and little to cause trouble with these Texrope units. Over 200 are in use — pumping and drilling.

These reduction units can be supplied complete with Allis-Chalmers oil well motors. Electric steel frames and spiders give these motors great strength with a minimum amount of weight. Compactness in design permits shorter and more rigid shafts. These motors, designed especially for drilling wells and pumping oil, are built with a reserve strength that is assurance against breakdown.

Write your nearest oil field office for detailed information on Allis-Chalmers oil field equipment. Stocks carried at Tulsa, Houston, Sweetwater, and Los Angeles.

ALLIS-CHALMERS MANUFACTURING CO., MILWAUKEE, WIS.

ALLIS-CHALMERS MOTORS and TEXROPE DRIVES

356 MILES

A REPEAT

SMITHWELDED

ORDER . . .

placed by the Pacific Gas and Electric Company, following their installation of

237

miles of
SMITHWelded
Gas Line Pipe

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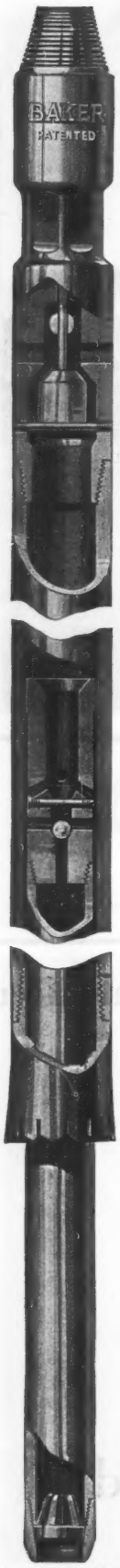
GAS LINE PIPE



Baker Standard Core Barrel with Core Barrel extended partly to show construction.

"We regard the Performance of this Core Barrel as Quite Remarkable—especially considering Hardness of Formation being cored"

This, the comment of one of the enthusiastic users of the Baker Standard Core Barrel, is only one of many hundreds of similar expressions we have received after it had been submitted to the most difficult tests and had made good. The Baker Core Barrel eliminates all guessing about the formations being drilled —it brings the facts to the surface.

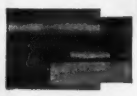
¶ THE CORE BARREL— The Baker Standard Core Barrel consists of two main parts—an outer drilling barrel and an inner core-retaining tube, as shown in the illustration at the left. The superior performance of this Core Barrel is due to the valve shown in the head of the Drill Barrel. The Core Barrel is placed in the string in the same position as the bit, and is operated with a somewhat slower motion and shorter stroke than the drilling bit. It will withstand the most severe usage that can be given with this shorter stroke and slow motion. It will take uncontaminated cores in all formations, whether hard or soft.

¶ THE CORE EXTRACTOR— The Baker Two-Stage Hydraulic Core Extractor is illustrated below, with the piston shown in the low pressure position. The simple half-turn throw of the catch engages the high pressure piston. The Sub is made with both male and female threads, for extraction of core from either end of Core Retaining Tube. The Core Pusher Plunger fits snugly in Core Retaining Tube. Tongs are also shown.

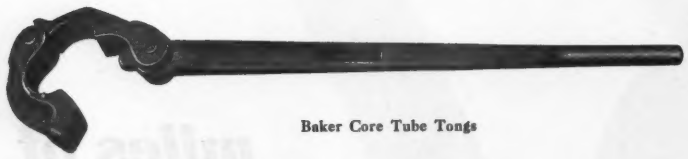
¶ THE CORE— The illustration at the right, which is taken from the photograph of an actual core taken with the Baker Standard Core Barrel, shows the clean-cut, uncontaminated form in which the core is brought to the surface. The form in which the core is recovered depends, of course, on the character of the formation being drilled but, working under either easy or very difficult conditions, the Baker Standard Core Barrel will bring to the surface an accurate and dependable cross section of the formation.

Sample of cores taken with Baker Cable Tool Core Barrel in medium to fairly hard formations.

¶ ACCESSORIES— For the proper and most efficient use of the Baker Standard Core Barrel we have designed certain necessary accessories, here illustrated. They promote the efficient use of the Barrel and the extraction of the core. For complete information regarding the ordering and use of this Core Barrel equipment request the detailed catalog section.

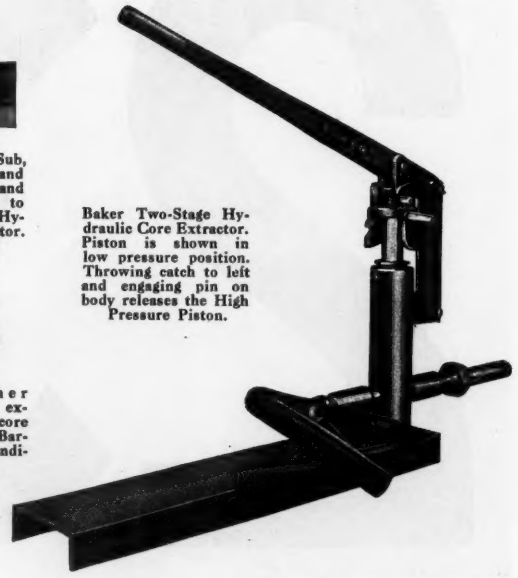


New style Sub, with both male and female threads and inner threads to connect with Hydraulic Extractor.



Baker Core Tube Tongs

Core Pusher Plunger — for extracting the core from the Core Barrel in good condition.



Baker Two-Stage Hydraulic Core Extractor. Piston is shown in low pressure position. Throwing catch to left and engaging pin on body releases the High Pressure Piston.

Baker Drill Barrel Tongs

Your Guess May Be Good—But Coring Means Positive Knowledge of Formations

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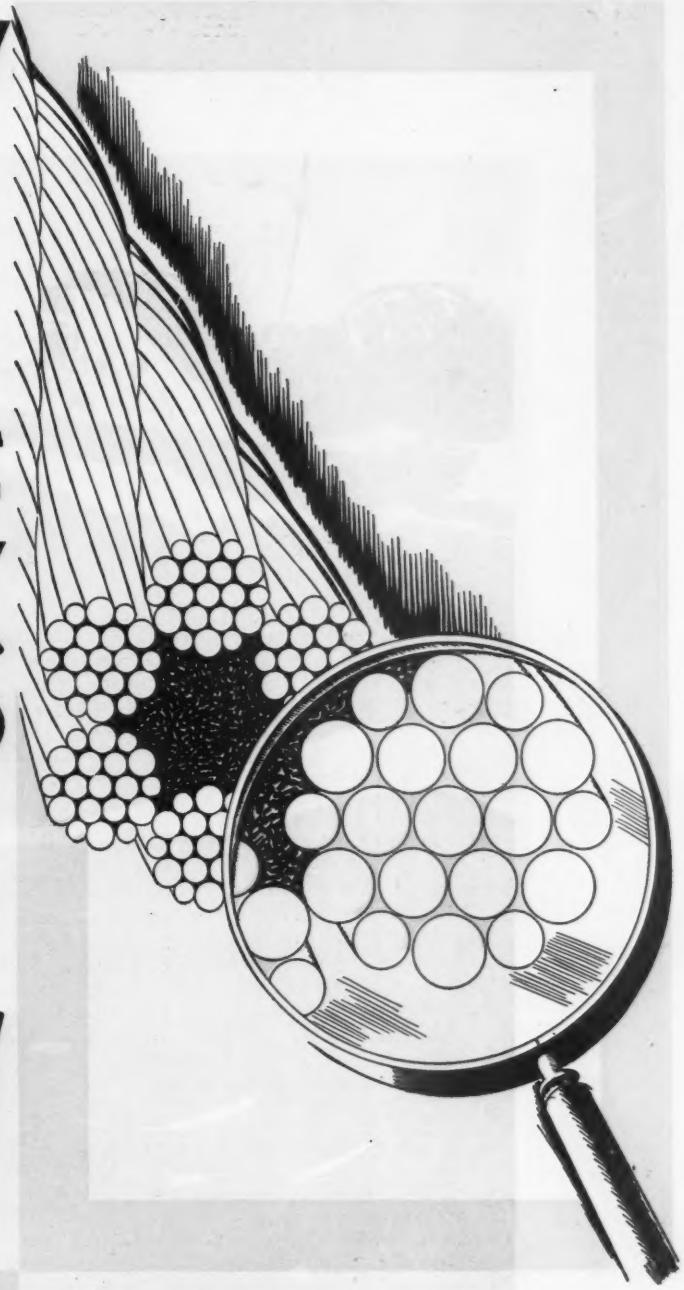
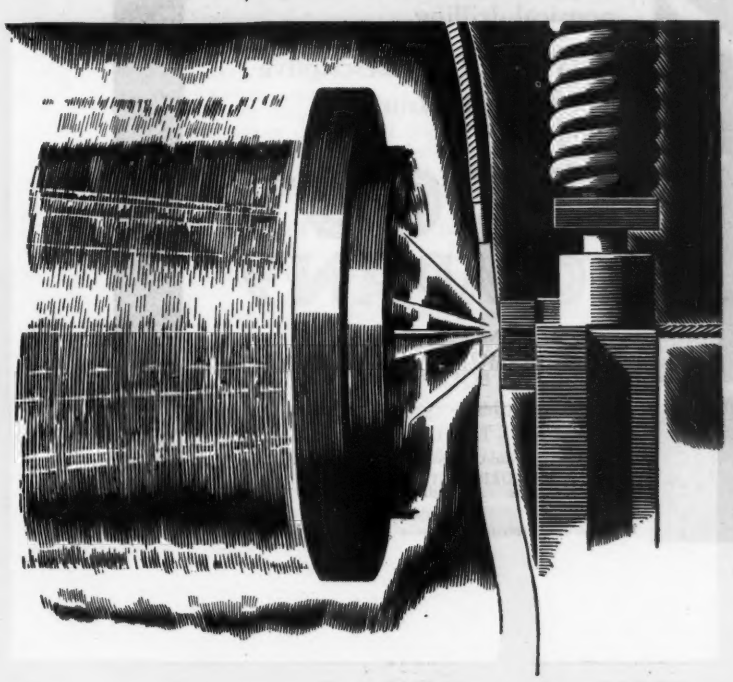
Baker Standard Core Barrel is Universally Accepted as the Standard of Coring Performance

NOW MACWHYTE WIRE LINES *Lubricated*





ALL THROUGH!

Not just the hemp core—not just the outside of the line—but every wire in the line individually greased during fabrication. Every wire sprayed with high grade petroleum grease as it is stranded. They stay greased for the life of the line. Longer service—greater economy.

Macwhyte Company, Kenosha, Wisconsin

to the fartherest corners of the earth, go

STOODITE *and* **BORIUM**

TO THE ORIENT, the Antipodes...South America . . . *everywhere that man seeks "black gold,"* STOODITE and BORIUM are used.

This far-flung distribution, is, perhaps the finest testimony that can be offered as to the time and money-saving qualities of these two helps to economical drilling.

Write for free descriptive literature.

STOODY COMPANY

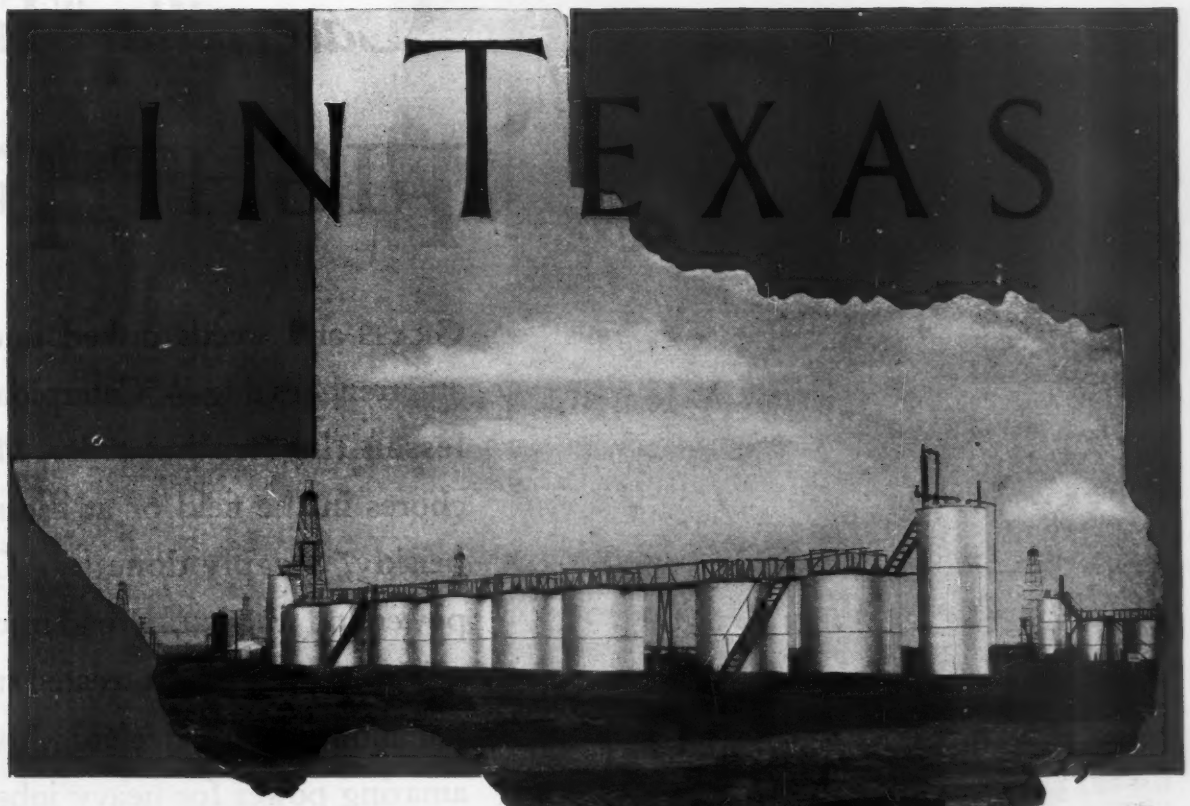
Manufacturers of
WELDING ROD · ALLOY STEEL EQUIPMENT

Whittier - - - California

District Offices - Tulsa, Oklahoma - New York City

Mid-Continent Distributors
WELDERS SUPPLY COMPANY
Dallas - Tulsa - Houston

Distributors Located in Principal Industrial Districts of the World



The fine looking tanks pictured here are on Group No. 1 location (deepest oil well in the world) Texon Oil Company, Big Lake, Texas. Substantial design, faultless construction, precision punching and forming and prime steel all contribute to the fine appearance they make.

BUTLER BOLTED TANKS

STEEL BUTLER PRODUCTS

THE scene is typical of Butler installations wherever oil is produced in Texas—or for that matter, in all oil producing regions. Now, in addition to long established standards of bolted tank construction, Butler Bolted Tanks are available in conformity with A. P. I. dimentional standards. Butler welded field tanks are one integral unit of steel with the stamina to withstand the pressure of treating processes.

The Butler field service organization is far-flung, strategically located, adequately stocked and capably manned to render, day or night, the dependable field service on which to safely rely. Any authorized dealer listed below can install Butler Bolted Tanks up to 10,000 barrels capacity and Butler Welded Tanks made to any specifications. Write us for a copy of the catalog "Butler Oil Field Tanks".

Butler A. P. I specification Bolted Steel Tanks carry the official monogram reproduced here.

This, and the Butler monogram, is a double pledge of the utmost value in Bolted Steel Tanks.

BUTLER MANUFACTURING COMPANY

1244 EASTERN AVE. KANSAS CITY, MO.
944 SIXTH AVE. S. E. MINNEAPOLIS, MINN.

These reliable dealers are ready to render speedy Butler Bolted Tank Service:

Drane-Humphrey Co., at San Angelo, Big Lake, Pyote and McCamey, Texas; and Roswell, New Mexico.

Keyes-Butler Tank Co., of Casper and Cody, Wyoming.

Drane Tank Co., at Tulsa, Holdenville, Seminole, Hallett and Shawnee, Oklahoma; El Dorado, Madison, Wichita and Valley Center, Kansas.

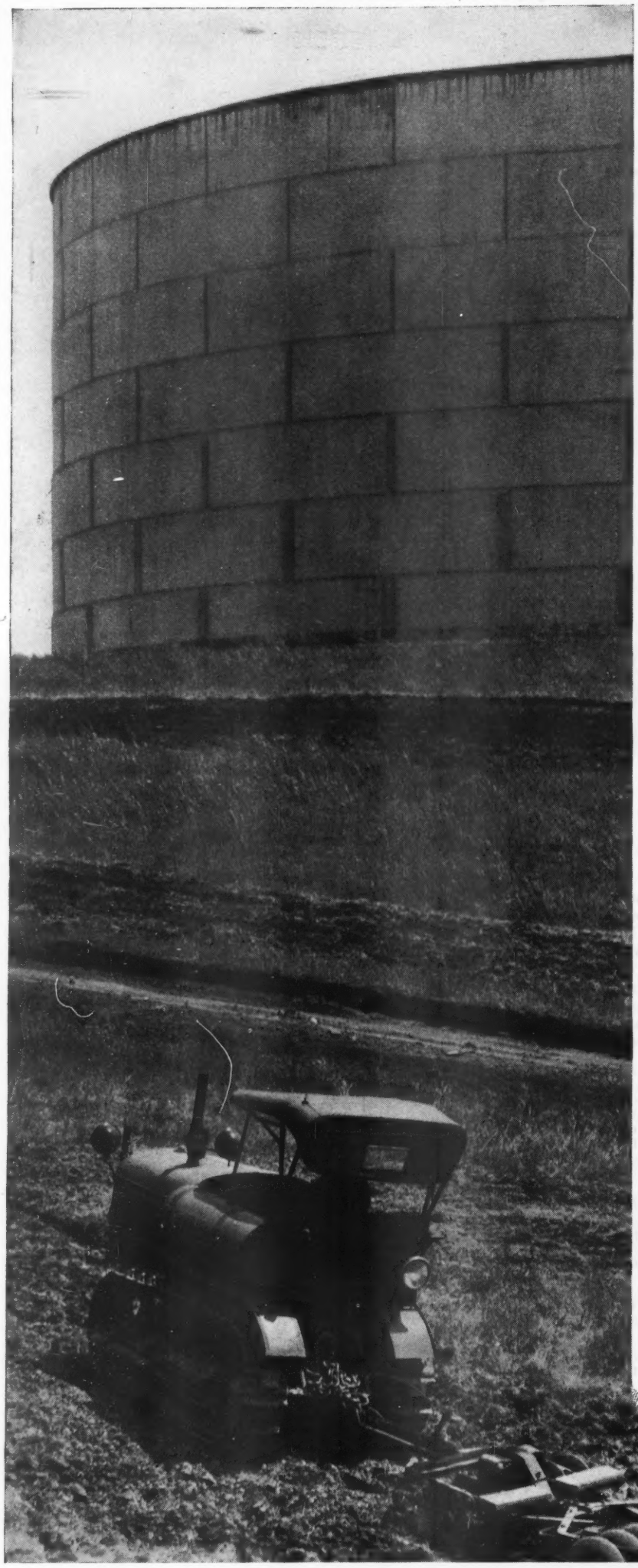
Muskegon Boiler Works, Muskegon, Michigan.

Gulf Coast Tank Company, 1612 Moffit Street, Houston, Luling and Refugio, Texas, V. P. Hughes, Prop.

Thomas Moran at Oil City, Shreveport and Georgetown, Louisiana.

M. A. Trimmer, at Blackwell and Lovell, Oklahoma.

E. F. Hay, Dupo, Ill.



"Caterpillar" Tractors

FIGHT FIRE

GRASS and weeds disked under—dykes and trenches dug—"Caterpillar" Tractors lessen the fire hazards. Many other chores in the field or at the refinery are briskly, cheaply done by "Caterpillar" power and traction. Broad tracks that ride safely over mud; heat-treated steels that do not allow dust to interfere with a long life; amazing power for heavy jobs and a willing nimbleness for light ones—no wonder so many "Caterpillar" Tractors are going into the oil fields!

Prices—f. o. b. Peoria, Illinois

TEN	$1125	TWENTY	$1975
FIFTEEN	$1500	THIRTY	$2475
		SIXTY	$4300

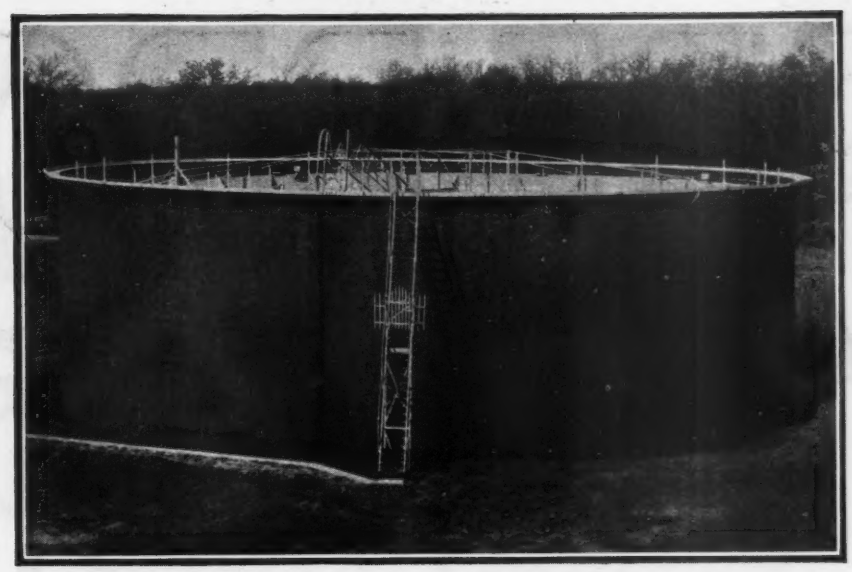
Caterpillar Tractor Co.

PEORIA, ILLINOIS *and* SAN LEANDRO, CALIF., U. S. A.

Track-type Tractors / Combines / Road Machinery

(There is a "Caterpillar" Dealer Near You)

CATERPILLAR
REG. U. S. PAT. OFF.
TRACTOR



Wiggins Floating Roof on a 95 ft. 6 in. tank of the Prairie Pipe Line Company at Caney, Kansas. The roof rises and falls with the changing oil level, effectively separating oil and air and thereby minimizing the tendency to evaporate and the possibility of fire.

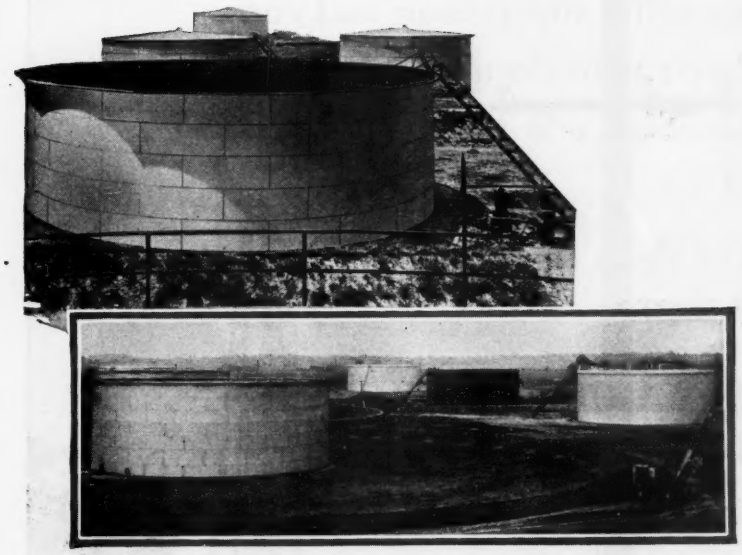
Below: Gasoline storage tank with Wiggins Floating Roof at Buenos Aires, Argentina. In background, tanks with ordinary cone roofs.

Like Skimming the Cream off Milk

Evaporation of the lighter fractions of your crude stored under ordinary "gastight" roofs has the same effect as taking the cream off milk. It lowers the gravity of the oil and consequently the price scale.

The loss by evaporation from working tanks can be reduced to almost nothing by Wiggins Floating Roofs, which keep air out of contact with the oil. For example, a working tank at a pumping station handling 10,000 bbls. of average Mid-Continent crude daily will lose 3,000 to 4,500 bbls. per year with ordinary roofs. A Wiggins Floating Roof cuts this loss to not more than 150 bbls. a year. On a 90 ft. diameter tank, the roof pays for itself in nine months.

Wiggins Breather Roofs give you similar savings on tanks for standing storage. Ask our nearest office for data on evaporation losses and list of nearby users of Wiggins Roofs.



Typical group of 80,000-barrel oil storage tanks equipped with Wiggins Floating Roofs.

CHICAGO BRIDGE & IRON WORKS

Dallas	3341 Magnolia Bldg.	Detroit	1514 Lafayette Bldg.
New York	3147 Hudson Terminal	Philadelphia	1615 Jefferson Bldg.
Cleveland	2204 Union Trust Bldg.	San Francisco	1054 Rialto Bldg.
Chicago	2128 Old Colony Bldg.	Havana, Cuba	Apartado 2507
Boston	1517 Consolidated Gas Bldg.	Atlanta	1054 Healey Bldg.

STOP EVAPORATION LOSSES

with WIGGINS FLOATING ROOFS

PRE-PROVED
by past performances

Long life of poles is assured, under *International* methods, because sound timber only is subjected to preservative treatment—a treatment which is under strict scientific supervision and control; a treatment which results in a deep and uniform impregnation by the highest grade of creosote oil. There is no gamble. The element of chance has been removed.

International poles have been in service for over 30 years

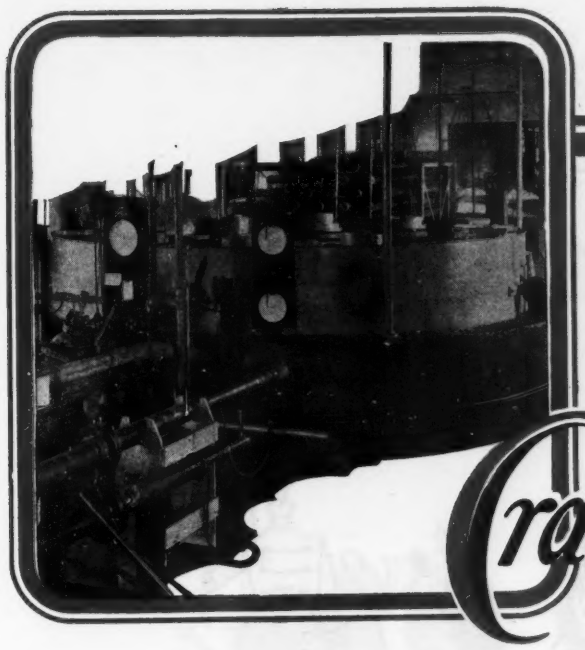
International Creosoting & Construction Co.

General Office: Galveston, Texas

International

Highest Quality

Creosoted Yellow Pine Poles



Cradle of Progress in Gas Measurement Engineering

24-page Laboratory Bulletin No. E-1. Distributed only on request.

The LABORATORY

PROGRESS has been nurtured for more than half a century by the eight units of American Meter Co. Exhaustive tests have built a ladder to leadership in gas measurement engineering.

Every meter manufactured by any one of these units must be a product which has been approved by American Meter Company laboratory standards. These standards have the single objective—Progress in PRECISION.

For the determination of large volume, high pressure measurement, the Erie Laboratory of American Meter Company offers unequalled facilities. The equipment and the work has recently been described in Bulletin No. E-1. This bulletin is not being circulated generally. Those interested, however, are welcome to one or more copies which will be sent upon request.

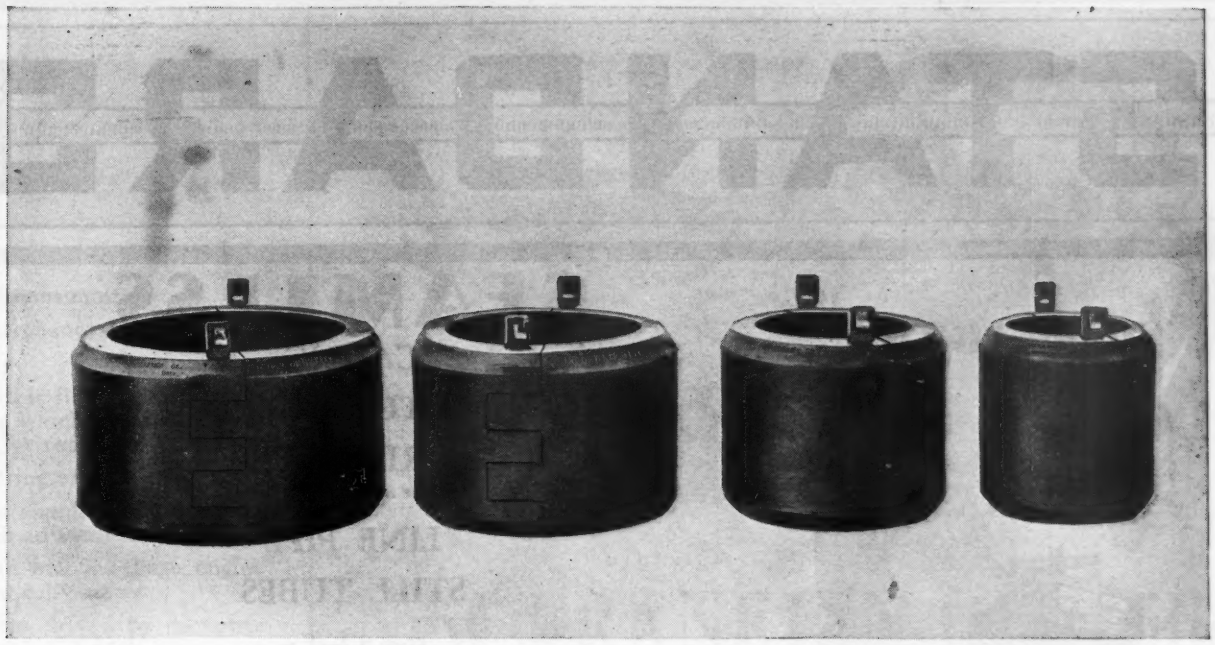
Metric Metal Works
ERIE PENNSYLVANIA
of
American Meter Company
INCORPORATED

KNOWN FACTORS CUBIC FEET IN METER VALUE

Yes, there are less expensive hotels than the Ritz, but the sophisticated traveler appreciates, more than anything else, the security and peace of mind of facilities he can depend upon.

There are also cheaper methods of cementing than the Halliburton method—but even the cheapest lock is expensive when used to protect a treasure chest!

HALLIBURTON OIL WELL CEMENTING CO.
Duncan, Oklahoma



No other casing guard has these important features

THE Goodrich Grip-Tite Casing Guard has a metal-locking construction, *completely embedded in rubber,* and so unique that (1) the guard can be applied to the pipe in *a few seconds;* (2) it cannot possibly work loose or change its position.

Yet that is but part of the story. It is an equally important feature that the rubber cannot come loose from the metal. Engineers are familiar with the Goodrich Vulcalock Process — by which rubber is "locked" to metal. The union achieved by this process is so strong that in adhesion tests the rubber itself will often tear before it separates from the metal. The development of this Goodrich process is almost a romance; it is a vital feature of the Grip-Tite Casing Guard.

It is also an important feature that the metal is completely *embedded* in the rubber. There can be no metal-to-metal contact.

See how this metal locking construction eliminates delay in putting on and taking off

Goodrich Grip-Tite Casing Guards need no expensive and clumsy special appliances to apply. A hammer is all that's required. Any workman can put them on in ten seconds. And it's just as simple to remove them. Unlock the pin—that's all. They eliminate wasteful destruction—unavoidable when old-type guards are used.

Twenty-five to thirty-three per cent saving in power is not unusual when these guards are used. They eliminate friction between the casing and drill pipe, increasing the speed of deep-well drilling.

If you don't already know all about them—if you're not already using them —let us give you additional information. The B. F. Goodrich Rubber Co., Est. 1870, Akron, Ohio.

•

Oil Field Branches

Pacific Goodrich Rubber Co.:
1386 East 7th St., Los Angeles, Cal.
650 Second St., San Francisco, Cal.
2625 Walnut Street, Denver, Colo.

The B. F. Goodrich Rubber Co.:
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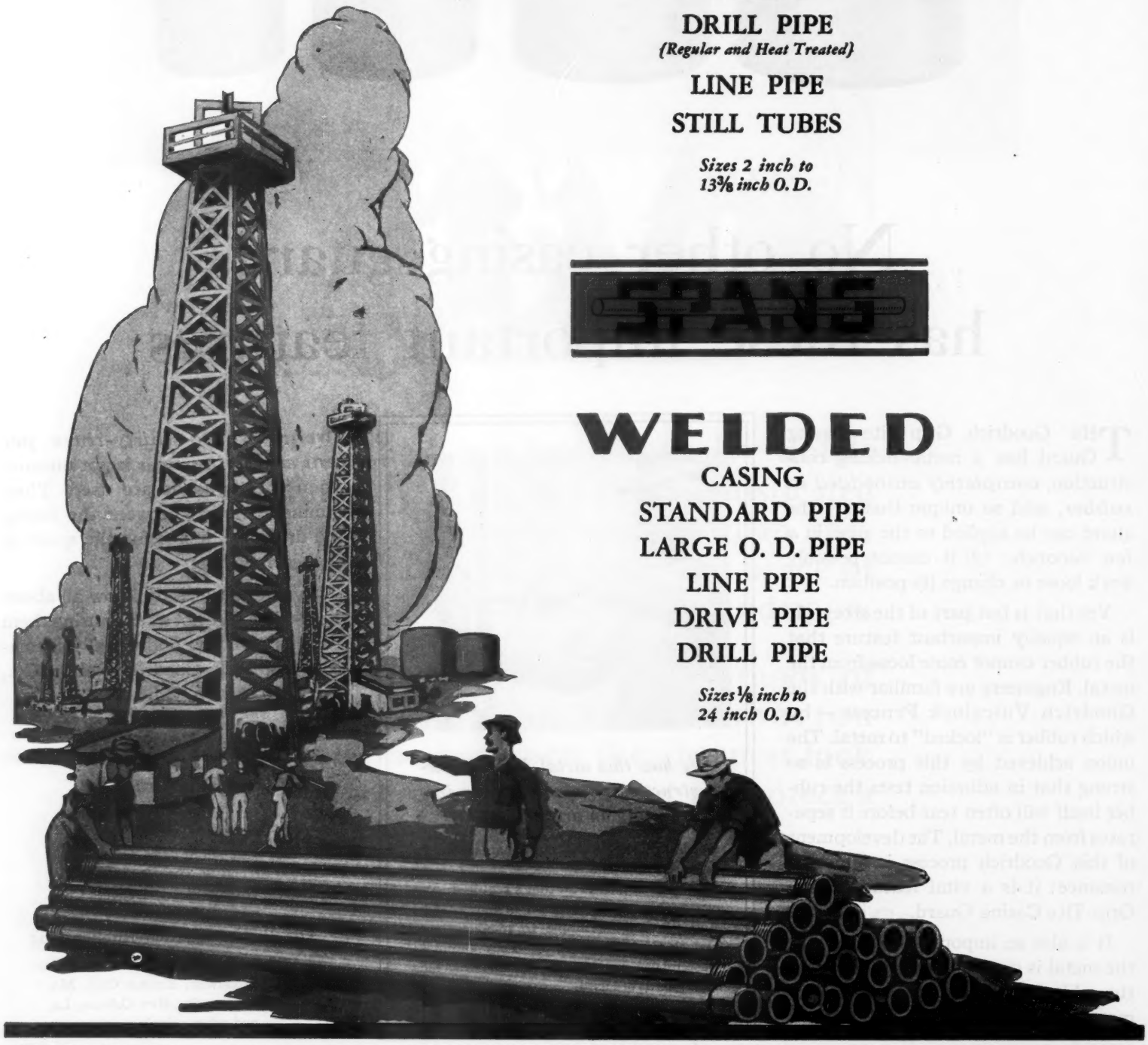
285 S. Peters St., New Orleans, La.
and other principal cities

Goodrich

STANDARD

Since 1828



SEAMLESS

CASING

TUBING

DRILL PIPE

(Regular and Heat Treated)

LINE PIPE

STILL TUBES

Sizes 2 inch to 13⅜ inch O. D.

SPANS

WELDED

CASING

STANDARD PIPE

LARGE O. D. PIPE

LINE PIPE

DRIVE PIPE

DRILL PIPE

Sizes ⅛ inch to 24 inch O. D.

SPANG, CHALFANT & Co., Inc.

General Offices: **CLARK BUILDING, PITTSBURGH, PA.**

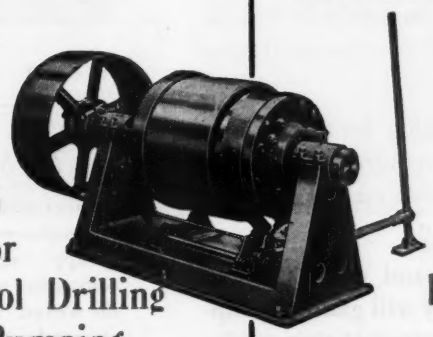
Sales Offices: CHICAGO, ILL. NEW YORK, N. Y. ST. LOUIS, MO. PITTSBURGH, PA. TULSA, OKLA. LOS ANGELES, CAL.

Welded Mills: ETNA, PENNA. SHARPSBURG, PENNA. ***Seamless Mills:*** AMBRIDGE, PENNA.

Franklin Valveless Oil and Gas Engines

Some of the Franklin OF Good Points

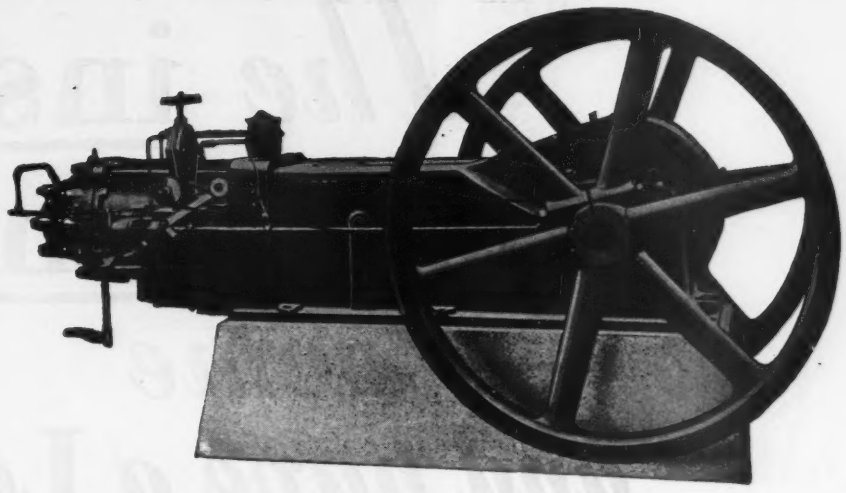
- Enclosed type
- Low fuel consumption
- 100% interchangeability
- Simplicity
- Piston rod is fitted with metallic packing which never needs adjusting or replacing
- Every spring exposed
- Complete simplicity with practically no adjustment
- In case of belt breakage engine automatically stops
- Fuel pump driven by eccentric running in oil bath
- Bearings are removable and reversible
- Only standard threads used. No special wrenches required
- Cylinder has 3 point force feed lubrication
- Balance of lubrication is splash feed
- Pistons are air cooled
- All nuts subject to vibration are castillated and fastened with cotter pins
- Most economical to operate in fuel, lubricant, water and repairs
- Easy to start



Type BG Clutch for Cable Tool Drilling or Pumping

- A vast improvement over the former type of clutches.
- Driven from pulley on engine. Permits the use of a larger diameter pulley and makes possible a slower clutch speed. Operates by hand lever on derrick.
- Construction and design prevent Reverse Clutch Troubles.

PRICE—$1200.00 F.O.B. Franklin, Penna.



New FRANKLIN OF Driller
The Engine With the Pedigree

Back of the new Type OF Franklin Valveless Engine are years of development work—and engines which in their time stood unsurpassed.

But—new times—new conditions. So here is the Type OF—an engine in its proper size, capable of going as deep into the ground as you need to go—at a smooth, swift pace and economically.

Whether your wells are located in proven fields or in isolated sections, you cannot beat the Franklin records of low operating costs — in fuel, lubricating oil or water. Both drilling and pumping sizes mount on the same block with corresponding bolt holes. Portable, light, powerful and easily serviced. What more could you ask?

Send for literature.

Franklin Valveless Engine Company
Franklin, Penna.

PRICES

40 H.P. Type OF Franklin, including water circulating pump and pulley. *$1550 F.O.B. Franklin*

50 H.P. Type OF Franklin, including water circulating pump and pulley. *$2050 F.O.B. Franklin*

80 H.P. Type OF Franklin, including water circulating pump, pulley and air starting equipment. *$3200 F.O.B. Franklin*

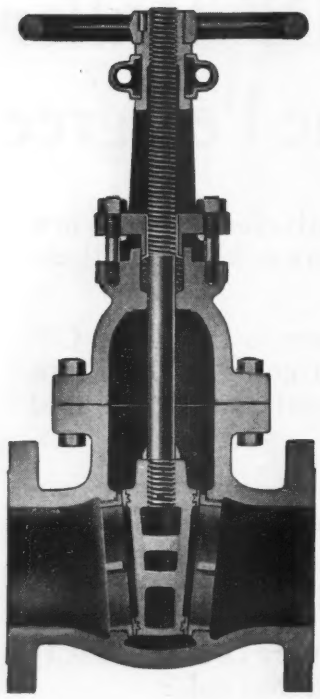
NOTE—Type OF is readily converted into type OG for gas fuelization.

Distributed by

OIL WELL SUPPLY COMPANY

Branches in All Oil Fields

The inside *is the* business side *— come and have a* Look-in



Cross-section O. I. C. Extra Heavy Semi-Steel Solid Wedge Gate Valve

HOW interesting it would be, if customers had "X-ray eyes"! Certainly they would be quick to recognize the generous worth of such valves as the O. I. C. Extra Heavy Gate Valve shown here in cross-section.

No need to tell about its *strength*—the picture says that, better than words could. High-grade semi-steel is used for body and yoke. The stem is of steel, or of bronze when specified. Seat rings, case rings, stem, collar, gland bushing and yoke nut are of bronze. Metal is so distributed as to give uniform strength throughout.

And the O. I. C. way is to carry these careful details all through. The wedges, for example, are of solid bronze, or of iron, bronze-faced,* depending on size; milled slots on the wedge engage ribs cast in the body, to avoid chattering of the disc, and also to reduce wear.

Special molded split ring packing fits the stuffing box and spindle perfectly and requires little compression. There is almost no wear on the spindle, while the packing lasts on and on.

Full information about these and other O. I. C. Valves for the Petroleum Industry will gladly be supplied by O. I. C. Distributors in principal cities, or by

THE OHIO INJECTOR CO., Wadsworth, Ohio

See How this Bronze Face is "Keyed In" To STAY

*Another example of O. I. C. thoroughness is our method of applying this bronze seating face to both sides of the wedge. Applied under tremendous pressure, the bronze and iron are brought solidly together and held by the "flowing" of the bronze tangs at an angle that provides a permanent union.

Good Valves *made by the* OIC folks *at* Wadsworth, Ohio

OIC

UNRETOUCHED PHOTO

Axelson STEEL Standing VALVES perfectly aligned

IN EVERY RESPECT these valves reflect the traditional quality, workmanship and finish upon which the Axelson reputation has been built. The valves have a ground taper on the body. The ball and seat is in exact alignment, resisting side wear. An advantage of the steel body is that it can be used repeatedly by grinding the tapered seat in the standing valve barrel. ♦ Axelson also manufactures the Babbitt, Super-Size, E-Z Pull, Ritter and Kelly Standing Valves —all of which are described in the new Axelson catalog.

THERE IS NO ECONOMICAL SUBSTITUTE FOR QUALITY

AXELSON MACHINE COMPANY

P. O. Box 337, LOS ANGELES ▼ TULSA ▼ ST. LOUIS ▼ 30 Church St., NEW YORK CITY

Mid-Continent and Eastern Distributors ... **Frick-Reid Supply Corporation**

Axelson Oil Well Pumps

What Is a Man Worth

IT DEPENDS ON WHAT HE DOES

—not on how much time he puts in.

Some fellows take a long time to do a little.

It is expensive to pay a worker for just putting in time.

What Is a Belt Worth

IT DEPENDS ON WHAT IT DOES

—not on how much time it puts in.

It may be "DODGING" work.

SOME BELTS, like SOME MEN, DO A LOT OF WORK IN LESS TIME THAN OTHER BELTS.

O & G DOES NOT "DODGE" THE WORK, BUT "STAYS RIGHT IN AND PITCHES."

Due to ITS TRACTIVENESS and ELASTICITY, O & G does more work in a given time than other belts—

ON THE JOB ALL THE TIME

BUY O & G FOR THE AMOUNT OF WORK IT CAN AND WILL DO.

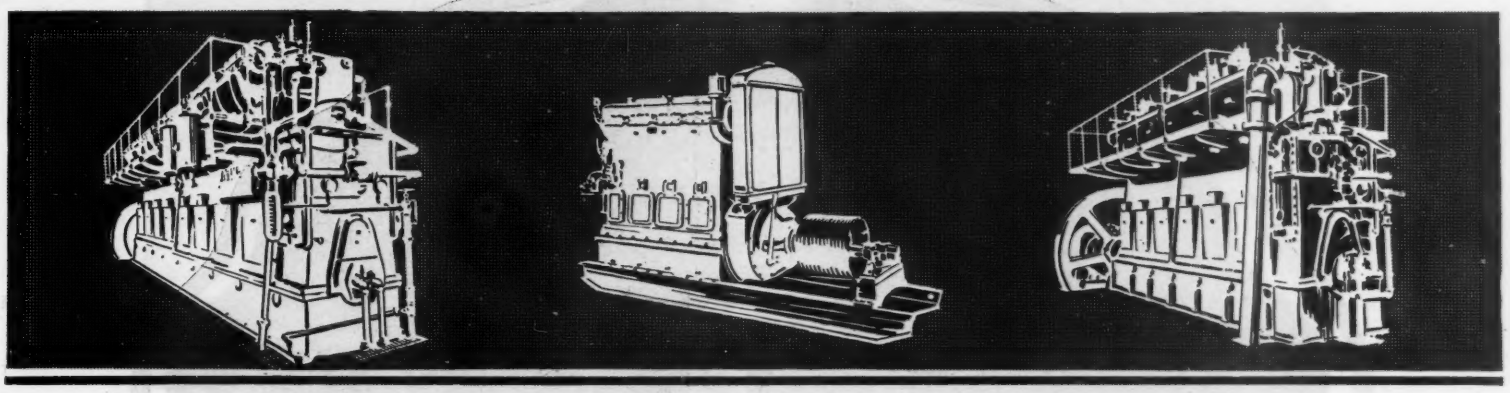
Stock Carried In all Fields By the Oilwell Stores.

IMPERIAL BELTING COMPANY

Manufacturers of high grade fabric belting.

CHICAGO, ILL.

O AND G BELTS



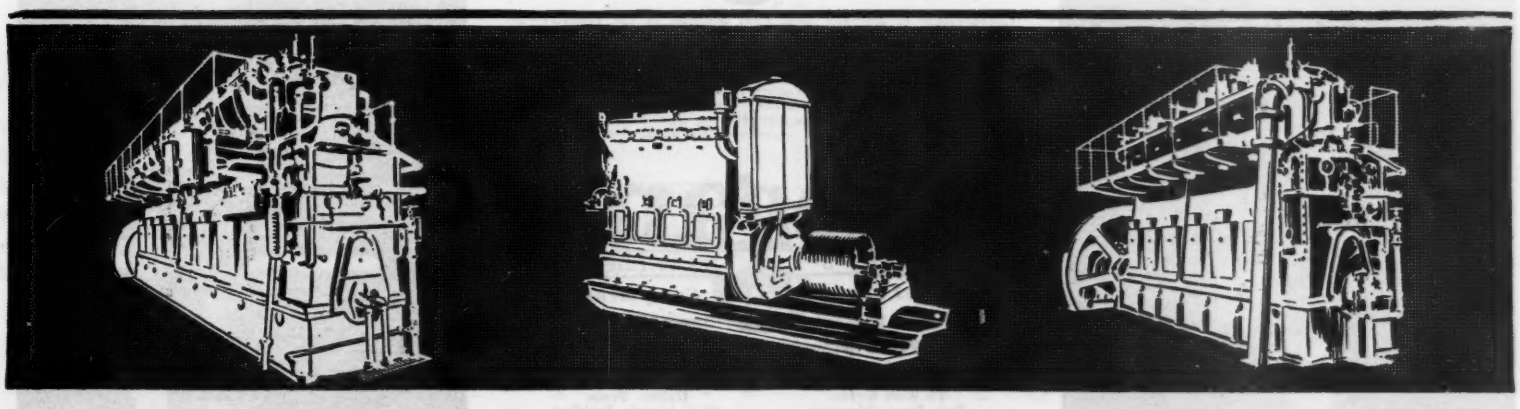
NOTHING can speak more forcibly for the quality and performance of Fulton-Diesels than actual service records.

To date there is over 6,000 Fulton H. P. in pipe line pumping service in the mid-continent oil fields.

Burning all grades of fuel from West Texas crude up to 36° Baume—on the job day and night—these engines are giving dependable service, some for more than 10 years.... It will pay you to investigate the economies of the Fulton-Diesel.

FULTON IRON WORKS CO., ST. LOUIS
Successful Engine Builders for over Seventy-five Years
PLANTS: St. Louis and Springfield, Ohio
BRANCH OFFICES AND AGENTS: New York ' Chicago ' New Orleans ' Springfield, Ohio ' Tulsa ' Dallas ' Houston ' Boston Pittsburg ' El Paso ' Mobile ' Salt Lake City ' Wichita, Kan. ' Havana

FULTON DIESEL

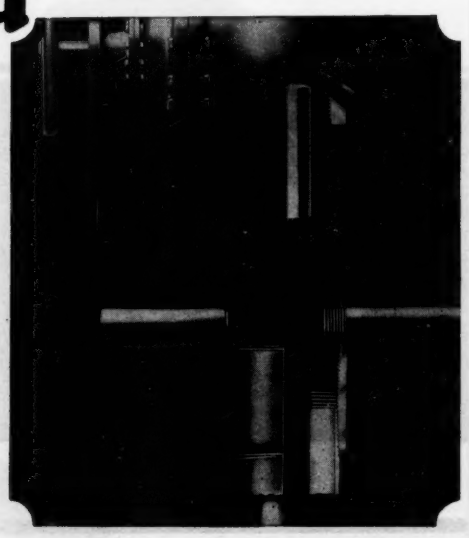


Aiding Conservation of Gas

Regan Tubing Head

Colorado Type

Hood Type



Conservation of gas—the most vital problem in the Industry—is most effectively accomplished by the simplest process. *Keep the gas in the sands.* Use of tubing enables you to flow wells by gas because of the restricted area through which the oil must flow upward. Tubing has an inherent tendency to hold back the gas and let the oil rise. The Regan Tubing Head offers the proper hook-up—a tightly sealed tubing terminal hydrostatically tested to withstand any production pressure and allowing easy access to the well. For flowing wells or gas-lift operations the Regan Tubing Head is essential.

Regan
Forge & Engineering Co.
Oil Field Equipment
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501-2 Marvin Building

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P. O. Box 444

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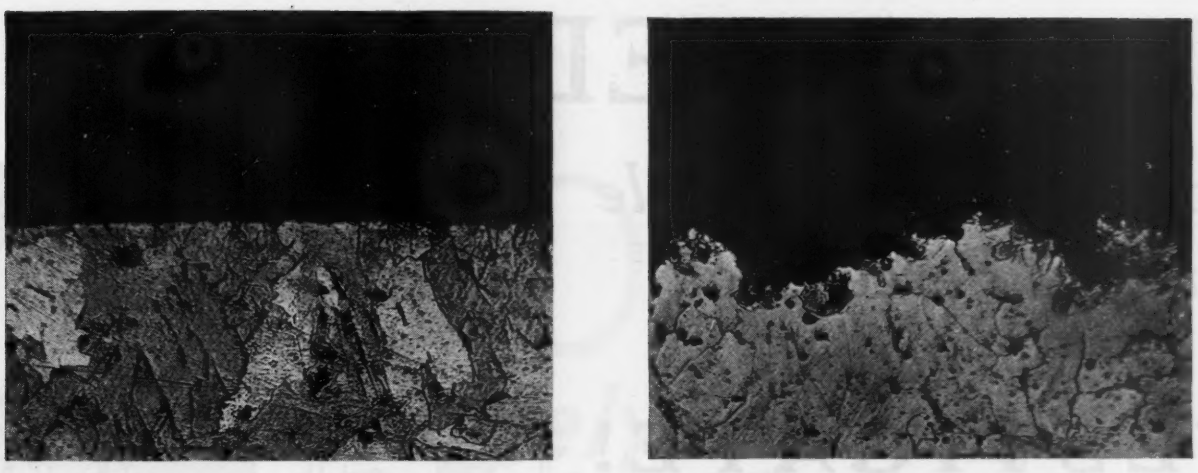
Care Amer. Consul



The left-hand unretouched microphotograph shows a cross-section of the shell of new steel line pipe. The photograph at the right shows the destructive effect of corrosion on unprotected pipe after it has been in the ground. Photographs have been enlarged 250 times.

When *CORROSION* attacks your pipe line

Most line operators realize the importance of giving the pipe a protective coating to ward off the inevitable menace of corrosion. But there are coatings *and* coatings.

For 23 years Hill, Hubbell & Company have specialized in the manufacture of protective coatings for metal, and oil and gas lines in particular. The fruit of their continuous research and experiment is a group of products called Biturine Coatings—Biturine Enamel; Biturine Enamel Primer*; Biturine Solution No. 5; Biturine 70-30; Biturine Coupling Solution. Biturine Enamel Primer can be obtained with Inhiburine.

Biturine, the base from which Biturine products are made, is not like other bituminous coatings. It is composed largely of sulphur-free coke oven pitch run to our own specifications and blended skilfully at high temperatures, with refined natural asphalts. The mixture is then processed to form a perfect chemical union of these Bitumens, resulting in a product proof against acids and alkalis and incapable of absorbing moisture.

The final test of any coating is the record in actual use. Thousands of miles of oil and gas lines protected by Biturine are in use today.

Our nearest office will be glad to furnish you with a list of Biturine users and specific instances where Biturine has added longer life to pipe lines.

***INHIBURINE**

This entirely new inhibitor with extraordinary anti-corrosive powers is now being incorporated into Biturine Primer whenever specified. Being solvent in Bitumens it becomes an integral part of the priming coat and thereby functions as a second line of defense against corrosion should the Biturine Enamel Coating be penetrated.

BITURINE COATINGS

Biturine Enamel Biturine Enamel Primer*
Biturine Coupling Solution
Biturine Solution No. 5 Biturine 70-30
Biturine Enamel Primer can be obtained with Inhiburine

GET THE FACTS

About machine coated, machine wrapped pipe *at the mill.* A new and exclusive Hill, Hubbell & Company process now available for the production of six leading pipe mills. Biturine coatings are particularly adapted for use with this process.

GENERAL PAINT CORPORATION

HILL, HUBBELL & COMPANY DIVISION

CHICAGO NEW YORK TULSA HOUSTON DALLAS SAN FRANCISCO OAKLAND
LOS ANGELES PORTLAND SEATTLE SPOKANE

GUARANTEED RESULTS

Foxboro Makes Possible Uniform Percentage of Extraction

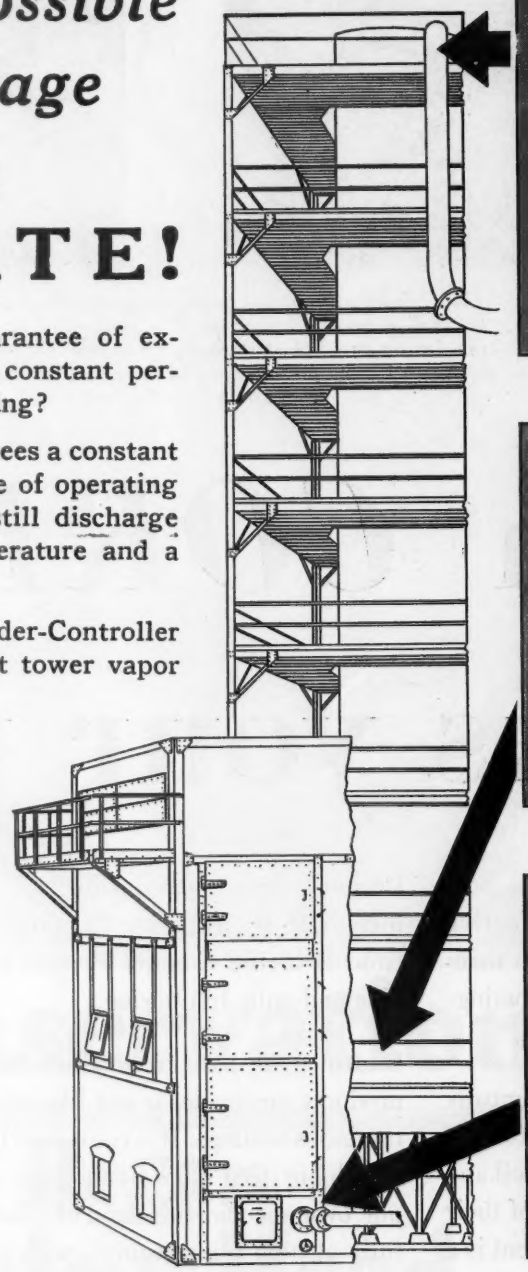
INVESTIGATE!

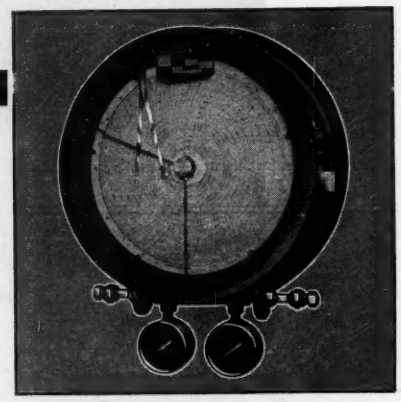
An astounding statement! But isn't a guarantee of extremely uniform end point specification and constant percentage of overhead product worth investigating?

A Foxboro Automatic Flow Controller guarantees a constant uniform charging rate to the still, irrespective of operating conditions. This results in a uniform pipe still discharge temperature, a constant bottom tower temperature and a constant vapor velocity in the tower.

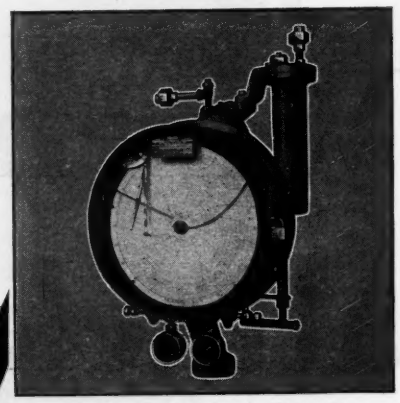
A Foxboro Automatic Temperature Recorder-Controller takes care of the minor fluctuations of outlet tower vapor and makes possible the close-cut fractions which you demand.

A Foxboro Automatic Liquid Level Controller makes possible a constant liquid level in the bottom of the tower and assures a uniform rate of delivery to the next succeeding still.

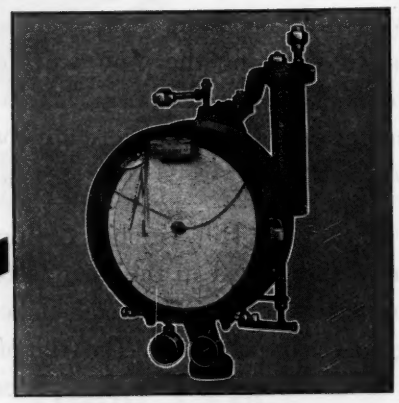




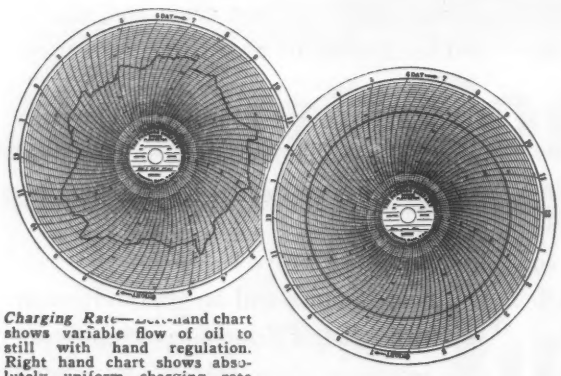
Foxboro Automat.c Temperature Recorder Controller.



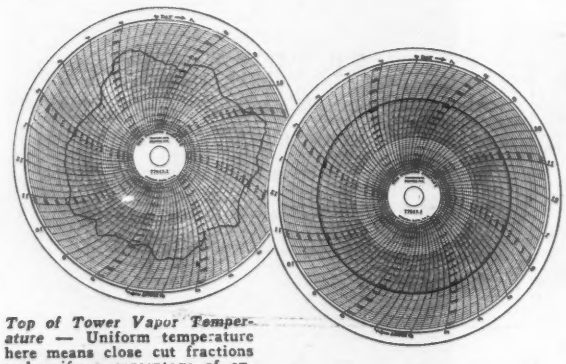
Foxboro Automatic Liquid Level Controller.



Foxboro Automatic Flow Controller



Charging Rate— [illegible]-hand chart shows variable flow of oil to still with hand regulation. Right hand chart shows absolutely uniform charging rate with Foxboro Automatic Flow Control.



Top of Tower Vapor Temperature — Uniform temperature here means close cut fractions and uniform percentage of extraction. Foxboro Automatic Temperature Control makes this possible. Chart at right shows Foxboro Automatic Control. Left-hand chart shows irregular hand control.

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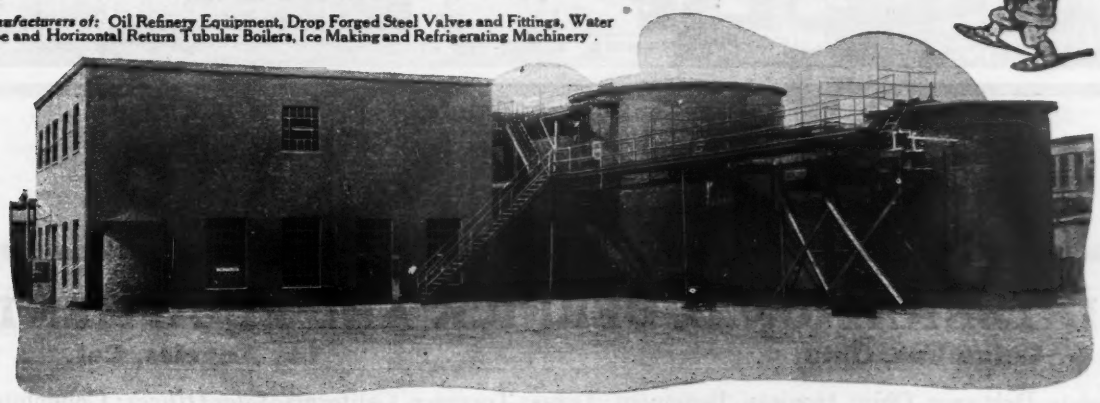
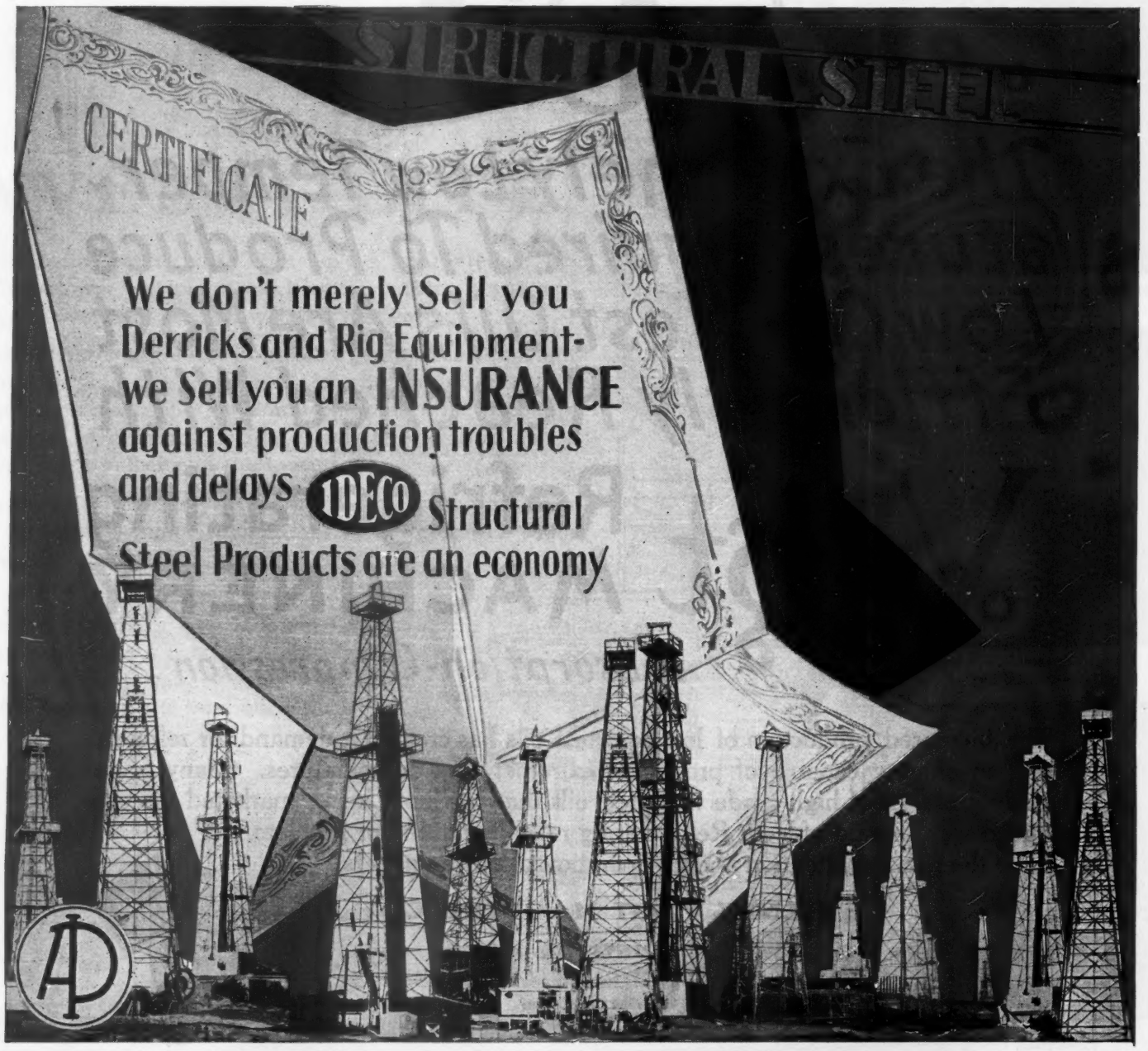


Vogt Refrigerating Machinery used in cold settling process by a large refinery at Wood River, Ill.

IDECO



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602

The ADVERTISERS' INDEX

A

Acme Fishing Tool Co.
Ajax Iron Works
Ajax Rope Co.
Alco Oil Tool Co.
Allegheny Steel Co.
Allis-Chalmers Mfg. Co. 9
All Steel Products Mfg. Co.
Aluminum Co. of America
American Askania Corp.
American Asphalt Paint Co.
American Cable Co., Inc.
American Fomon Co.
American Iron & Machine Works Co.
American La France & Foamite Corp.
American Radiator Co.
American Roller Bearing Co.
American Rolling Mill Co.
American Schaeffer & Budenburg Corp.
American Sheet & Tin Plate Co.
American Steel & Wire Co.
American Steel Works
American Telephone & Telegraph Co.
American Well Works 171
Anchor Post Fence Co.
Andrews Steel Co., The
Armstrong Bros. Tool Co. 173
Armstrong Machine Works 3
Ash Grove Lime & Portland Cement Co.
Athey Truss Wheel Co.
Axelson Machine Co. 25
Ayer & Lord Tie Co.

B

Baash-Ross Tool Co.
Babcock & Wilcox Tube Co., The
Badger, E. B., & Sons Co.
Baker Oil Tools, Inc. 12
Baldwin Chain & Mfg. Co.
Barco Manufacturing Co. 8
Barnickel, Wm. S., & Co. 149
Barnsdall Refineries, Inc. 91
Barrett Co., The
Bartlett Hayward Co., The
Beaumont Iron Works Co., The
Bell Oil & Gas Co.
Bendster Burner & Engineering Co.
Bessemer Engine Co. 74-75
Bethelehem Steel Co.
Bigelow Liptak Corp. 100
Big Lake Oil Co. 99
Bignall & Keeler Machine Works
Blackor Co. 59
Black, Sivalls & Bryson, Inc. 59
Bosch, Robert, Magneto Co., Inc.
Braden Steel Corp.
Braun, C. F., & Co. 145
Brewster Co., Inc., The 63
Bridgeport Machine Co.
Bristol Co., The
Broderick & Bascom Rope Co. 104
Brown, Arthur C. 173
Brown Instrument Co.
Brown Strauss Corp. 168
Buckeye Traction Ditcher Co.
Buda Co., The
Buffalo Gasolene Motor Co.
Burt Mfg. Co.
Butler Mfg. Co. 15
Byers A. M., Co.
Byron Jackson Co. 51-73

C

California Manufacturing & Engineering Co.
Cameron Tool & Supply Co.
Carey, The Philip, Co.
Caterpillar Tractor Co. 16
Central Alloy Steel Corp.
Central Tube Co.
Cessna Aircraft Co.
Chain Belt Co.
Champion Machine & Forging Co., The
Chaplin-Fulton Mfg. Co., The 168
Chapman Valve Mfg. Co., The
Chicago Bridge & Iron Works 17
Chicago Pneumatic Tool Co. 115
Chicago Steel Foundry
Chisholm-Moore Hoist Corp.
Clark Bros. 122
Classified Wants 124-125
Cleveland Trencher Co. The
Climax Engineering Co.
Colona Mfg. Co.
Columbian Rope Co. 150
Columbus Forge & Iron Co., The
Columbus Valve Mfg. Co., The
Consolidated Ashcroft Hancock Co., Inc.
Continental Supply Co., The 92
Cook, C. Lee, Mfg. Co.
Cooper-Bessemer Corp., The 74-75
Cooper, C. & G., Co., The 74-75
Crane Co. 171
Crane Packing Co.

D

D. & B. Pump & Supply Co. 84
Darling Valve & Mfg. Co.
Dart, E. M., Mfg. Co.
Davis, G. M., Regulator Co. 162
Dearborn Chemical Co.
Delta Electric Co.
Detroit Graphite Co.
Dodge Bros. Corp.
Doheny Stone Drill Co.
Donner Engineering Co.
Donovan Boiler Works, Inc.
Dow Chemical Co., The
Drane Humphreys Co., Inc.
Dresser & Gorton, Inc.
Dresser, S. R., Mfg. Co. 45
Du Pont de Nemours & Co., Inc., E. I. Inside Front Cover
Durametallic Corp. 168

E

Eagle-Picher Lead Co.
Eclipse Lubricator Co., Inc.
Economy Pump & Oil Tool Co., The
Edward Valve & Manufacturing Co., The
Elliott Core Drilling Co. 163
Emerman, Louis E. & Co. 171
Empire Oil & Refining Co. 161
Emsco Derrick & Equipment Co. 84
Enduro Niros a Steel Co.
Engineering Research & Equip. Co. 128
Ethyl Gasoline Corp.
Exchange Banks of Tulsa

F

Feedwaters, Inc.
Fenwick-Reddaway Mfg. Co.
Ferodo & Asbestos, Inc. 160
Fisher Governor Co.
Fisk Tire Co., The 67
Flagg & Co., Inc., Stanley G.
Fluor Construction Co.
Fort Worth Steel & Machinery Co.
Foster Wheeler Corp.
Four Wheel Drive Auto Co., The
Foxboro Co., Inc., The 30
Franklin Valveless Engine Co. 23
Frates Co., The
Frick-Reid Supply Corp. 64
Fulton Iron Works Co. 27

G

G & M Co., Inc., The
Gardner-Denver Co.
Garlock Packing Co.
Gaso Pump & Burner Mfg. Co. Inside Back Cover
General Electric Co.
General Paint Corp. 29
Gilbert & Barker Mfg. Co. 158
Goble, B. G.
Goodrich, B. F., Rubber Co., The 21
Goodyear Tire & Rubber Co.
Goslin Birmingham Mfg. Co., Inc.
Gott, H. P., Mfg. Co., Inc. 173
Goulds Pumps, Inc.
Grant Oil Tools Co.
Graver Corp.
Gray Processes Corp., The
Greene, Tweed & Co.
Greenspon's, Joseph, Sons, Iron & Steel Co. 169
Griscom-Russell Co. 97
Gu'berson Corp. 69
Gulf Refining Co. 110

H

Halliburton Oil Well Cementing Co. 20
Hanlon-Waters, Inc.
Harrisburg Pipe & Pipe Bending Co.
Haynes Stellite Co.
Hazard Wire Rope Co.
Heat Transfer Products, Inc.
Heeter, Sons & Co., Inc., C. M.
Hercules Motors Corp.
Hercules Supply Co.
Hercules Tool Co.
Heydrick Mapping Co. 173
Hill, Hubbell & Co. 29
Hills-McCanna Co.
Hinderliter Tool Co.
Hope Engineering Co.
Hough, Charles N., Mfg. Co.
Hughes Tool Co. Back Cover
Humble Oil & Refining Co.
Hussmann Hotel
Hyatt Roller Bearing Co.

I

Imperial Belting Co. 26
Imperial Refineries
Imperial Royalties Co.
Independent Oil & Gas Co.
Industrial Brownhoist Corp.
Ingersoll-Rand Co.
International Cement Corp.
International Composition Co., Inc. 169
International Creosoting & Construction Co. 18
International Derrick & Equip. Co. 32
International Harvester Co. of America
International Minerals & Metals Corp.
International Nickel Co., Inc. The 156
International Petroleum Exposition
International Supply Co. 119

J

Jackson Co., Byron 51-73
Jackson Engineering Corp.
Jarecki Mfg. Co.
Jefferson Union Co.
Johns-Manville Corp.
Jones & Laughlin Steel Corp.
Jones, The S. M., Co.

K

Kaw Steel Construction Co.
Kellogg, M. W., Co., The 2
Kelly, John Eoghan
Kennedye-Plumb Corp.
Kennedy Valve Mfg. Co., The
Kentucky Wagon Mfg. Co., Inc.
Kerotest Mfg. Co.
Key Boiler Equipment Co. 157
Kirk-Morrow Iron Works, The
Kohler Co. 154
Koppers Co., The
K-W Ignition Corp., The

L

Landis Machine Co.
Larkin Co.
Layne & Bowler Co.
Leader Iron Works
Lees-Bradner Co.
Leschen, A., & Sons, Rope Co.
Lientz & Co., B. P.
Lincoln Electric Co.
Linde Air Products Co. 70
Link Belt Co.
Longyear, E. J., Co.
Lorraine Corp., The
Lucey Products Corp.
Ludlow Valve Mfg. Corp. 104
Ludlum Steel Co.
Lufkin Fdy. & Machine Co., The
Lufkin Rule Co. 165
Lummus, The Walter E., Co.
Lunkenheimer Co.

Mc

McAlear Mfg. Co., The
McCord Radiator & Mfg. Co. 166
McEverlast, Inc.
McEvoy, J. H. & Co.
McGregor Working Barrel Co.
McIntosh & Seymour Corp.
McKee, Arthur G., & Co. 78-79
McNabb Oil & Refining Co.

M

MacClatchie Mfg. Co.
Macwhyte Co. 13
Madison-Kipp Corp.
Magnolia Petroleum Co.
Mahoney Ryan Aircraft Corp., The
Maloney Tank Mfg. Co. 174
Manzel Bros. Co.
Marion Machine Fdy. & Supply Co.
Marley Co., The
Marsh Gauge Pole Co. 173
Martin-Loomis Corp.
Mason Regulator Co.
Medart Co., The
Melcher, A. F.
Merco Nordstrom Valve Co. 152
Metric Metal Works 19
Midwest Piping & Supply Co., Inc.
Milam Building, The
Miller Combination Bailer & Pump Co.
Miller Improved Gas Engine Co.
Miller, Max B., & Co., Inc.
Mine Safety Appliance Co. 172
Missouri Portland Cement Co.
Moon Mfg. Co., The
Moore, Lee C., & Co., Inc. 55
Munn & Co. 173
Muskogee Iron Works
Myers, F. E., & Bro. Co. 171

N

National Lead Co.
National Lumber Manufacturers Ass'n
National Petroleum Engineering Co. 165
National Supply Co. 88-89
National Tank Co. 170
National Tool & Metals, Inc.
National Transit Pump & Machine Co. 49
National Tube Co.
Natural Gas Equipment Co.
Naylor Pipe Co. 4
Nellan, Schumacher & Co. 164
Norris Bros., Inc.
North American Car Corp.
Northern Pump Co.
Novo Engine Co.
Nye Tool & Machine Works 7

O

Oakite Products Co.
O'Brien Steel Construction Co.
Ohio Injector Co., The 24
Oil Conservation Engineering Co., The
Oil Countries Specialties Mfg. Co., The.
Oil Equipment & Engineering Exposition
Oil Insurance Association
Oil Well Improvements Co.
Oil Well Supply Co. 83
Oklahoma Gas & Electric Co. 70
Oxweld Acetylene Co.

P

Page & Hill Co.
Page Steel & Wire Co.
Parkersburg Machine Co.
Parkersburg Rig & Reel Co. 87
Parmenter & Selby 173
Parsons Co., The 164
Patrick, R. S.
Patterson-Ballagh Corp. 94-95
Pattin Brothers Co.
Penberthy Injector Co. 53
Petroleum Engineering Corp.
Petroleum Iron Works Co.
Pforzheimer, Carl H., & Co. 172
Phillips Petroleum Co.
Pittsburgh Equitable Meter Co. 173
Pittsburgh Screw & Bolt Corp.
Pittsburgh Steel Products Co.
Pittsburgh Valve, Fdy. & Construction Co. 6
Podbielniak, W. J. 171
Pomona Pump Co.
Powell, William, Co.
Power Piping Co.
Prescott Co., The
Pressed Steel Car Co.
Pres-O-Lite Co., Inc., The 70
Protective Metals, Inc.
Pure Oil Co.
Pyle National Co.
Pyrene Mfg. Co.

Q

Quaker City Rubber Co. 171

R

Raigorodsky, P. M. 171
Rau Construction Co.
Reading Iron Co. 146
Reading Steel Casting Co., Inc.
Reece Wooden Sole Shoe Co., Inc.
Regan Forge & Engineering Co. 28
Reid, Joseph, Gas Engine Co.
Republic Iron & Steel Co. 151
Republic Rubber Co., The

R

Republic Supply Co.
Resistcor Engineering Corp.
Riter-Conley Co.
Robinson Orifice Fittings Co. 173
Ross-Meehan Foundries Co.
Russell Mfg. Co., The
Ryan Aircraft Co.
Ryerson, Joseph T., & Sons, The 165

S

Safety Gas Main Stopper Co. 173
Selden Co., The
Shaffer Oil & Refining Co.
Shaffer Tool Works
Shaw, S. F.
Sheehan Pipe Line Construction Co.
Shell Petroleum Corp.
Sinclair Refining Co. 135
Sivyer Steel Casting Co.
Skelly Oil Co.
Skinner, M. B., Co.
Smith, A. O., Corp. 10-11
Smith Engineering Co.
Smith, H. C., Mfg. Co., Inc.
Smith Separator Co.
Smooth-On Mfg. Co.
South Chester Tube Co.
Southern Cornice Works
Southwestern Engineering Corp. 43
Southwest Welding & Mfg. Co.
Spang & Co. 159
Spang, Chalfant & Co., Inc. 23
Springfield Wagon & Trailer Co.
Standard Power Equipment Corp.
Standard Steel Works
Star Drilling Machine Co.
Steiner, George 173
Sterling, Stop-Watch Co., The
Stockham Pipe & Fittings Co.
Stoody Co. 14
Stork Engineering Co.
Strom Steel Ball Co.
Strong Carlisle & Hammond Co., The
Struthers-Wells Co.
Sullivan Co., The
Sullivan Machinery Co.
Sun Shipbuilding & Drydock Co.
Sureshot Torpedo Co.
Swartwout Co., The

T

Taubman Supply Corp.
Taylor Instrument Companies
Templeton, Kenly & Co., Ltd. 165
Terry Steam Turbine Co., The
Texas Creosoting Co.
Texas Power & Light Co.
Thermoid Rubber Co.
Thompson, Wilfred A.
Timken Roller Bearing Co. 1
Titusville Forge Co.
Titusville Iron Works Co., The
Toledo Pipe Threading Mch. Co, The 153
Trackson Co.
Trimont Mfg. Co.
Truman-Smith Const. Co. 103
Trumble Gas Trap Co. 168
Tube Turns, Inc.
Tulsa Boiler & Machinery Co.
Tulsa Chamber of Commerce 109
Tulsa Sheet Metal Co.
Twin Disc Clutch Co.

U

Union Carbide & Carbon Corp. 70
Union Mfg. Co.
Union Wire Rope Corp.
United Tractors & Equip. Corp.
Universal Oil Products Co. 47

V

Valles Rotary Filters Co.
Vez Company, The
Victaulic Co. of America
Victor Balata & Textile Belting Co.
Victor Welding Equipment Co.
Vogt, Henry, Machine Co. 81

W

Wagner Electric Corp.
Walles, Dove-Hermiston Corp 169
Walworth Co. Front Cover
Warren Petroleum Co.
Washburne, Chester W. 173
Waukesha Motor Co. 77
Wertzberger Derrick Co.
Western Gas Construction Co., The 167
Westinghouse Electric & Mfg. Co., The 148
West Texas Utilities Co.
Whiting, P. H., & Co., Inc.
Wickwire Spencer Steel Co. 101
Wico Electric Co.
Wiemann-Kammerer-Wright, Inc. 155
Wilgus Mfg. Co., The
Williamette Ersted Co.
Williams, J. H., & Co.
Williamsport Wire Rope Co. 81
Williams Tools Corp.
Wilson-Snyder Mfg. Corp.
Wilson Welder & Metal Co., The 61
Winkler-Koch Engineering Co., The
W-K-M Co., Inc.
Wood Shovel & Tool Co., The
Worthington Pump & Machinery Corp. 8
Wright Mfg. Co.
Wyatt Metal & Boiler Works

Y

Yale & Towne Mg. Co. 143
Young Engine Corp.

Z

Zero Hour Torpedo Co., The
Zwetsch, Heinzelmann & Co. 172

The Oil and Gas Journal

PRODUCING REFINING ENGINEERING MARKETING

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TABLE OF CONTENTS

SPECIAL ARTICLES

California Action Clears Situation 35
By Andrew M. Rowley
Agreement of operators there to curtail production will benefit other areas threatened by cheap products.

Agreement Is Reached in California 37
By L. P. Stockman
Santa Fe Springs operators will reduce production 120,000 bbls. daily. Price cut probably will be rescinded.

Refinery Operators Discuss Problems 38
By W. T. Ziegenhain
Vacuum distillation, cost accounting, vapor phase cracking and stabilization.

Pressure Distillate Stabilization 39
By George A. Burrell and R. P. Mase
Degasification, fractionation and storage considered.

The Economic Storage of Oil 40
Present situation analyzed by Standard Oil of New Jersey.

Survey of Gasoline Service Stations 41
By C. E. Kern
Department of Commerce preparing questionnaire to obtain facts.

Aluminum Foil to Combat Corrosion 41
By L. G. E. Bignell
New product can be applied to tanks and pipe lines.

Does Rainfall Increase in Oil Fields? 42
By L. G. E. Bignell
Interesting theories compared with weather records.

Gasoline Questionnaire (Editorial) 44

Accounting at Petroleum Refineries 46
By C. E. Votrain
Workable method for skimming and cracking operations.

Flexibility in Vapor Phase Cracking 46
By C. R. Wagner
Experimental work indicates same quality gasoline can be obtained.

Pipe Line Construction News 68

Field Problems and Their Solution 93
Edited By Thomas F. Smiley

Map of Oklahoma City Pool 141

Requa Insists in Regulation 144

FIELD OPERATIONS

Late Fields 48

Oklahoma 50
By W. A. Spinney

Kansas 52
By W. A. Spinney

Gulf Coast 54
By Neil Williams

California 56
By L. P. Stockman

Michigan 56
By Special Correspondent

North Louisiana-Arkansas 58
By D. H. Bancroft

Southwest Texas 60
By B. D. Stevenson

Rocky Mountain Area 62
By Tolbert R. Ingram

Canada 62
By Victor Lauriston

Central West 76
By Whit

Eastern Fields 80
By D. S. Wakenight

Kentucky-Tennessee 80
By Whit

West Texas 65-169
By L. E. Bredberg

North Texas and Panhandle 66-169
By L. E. Bredberg

East Central Texas 142
By L. E. Bredberg

REFINING AND MARKETING

Export Purchases Aid Group 3 Market 36
By C. O. Willson
Spread between low and high gasoline prices narrowed due to heavy buying of high gravity grades. Minor changes in other products.

Technical Questions Answered 98
By Dr. C. K. Francis

Practical Suggestions in Refining 123
By W. T. Ziegenhain

Chicago Markets Show No Activity 126
By J. B. Waldo

Eastern Markets Steady 127
By A. E. Mockler

Natural Gasoline Manufacture 129

Brief Items for Petroleum Refiners 130

Refinery and Crude Prices 132-133

Tank Wagon Quotations 134

Of Interest to Sales Departments 147

ARTICLES OF GENERAL INTEREST

The Advertisers' Index 33

Men Known in Oildom and Personals 82

Equipment and Supplies 85-86-90

Natural Gas Developments 96

Classified Want Advertisements 124-125

Oil Securities Market 136-137

Crude Petroleum Statistics 176

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Refinery Section Starts on Page 123

California Action Clears the Situation

Highest daily average estimated total production in 1928, week ended Dec. 29, 2,585,844 bbls. Lowest in 1928, May 19, 2,338,241 bbls.

Agreement of Operators There to Curtail Production Will Benefit Other Areas Threatened by Cheap Products

By Andrew M. Rowley

Highest daily average estimated light oil production in 1928, week ended Dec. 29, 2,158,124 bbls. Lowest in 1928, Mar. 3, 1,927,713 bbls.

Stabilization of the petroleum industry seems nearer than at any other time in recent months as a result of the virtual agreement reached by operators in California to curtail production at Santa Fe Springs to 150,000 barrels daily, beginning November 1, a reduction of 120,000 bbls. daily from present output there. It is expected the success attained by those who sponsored the movement at Santa Fe Springs will aid in the efforts being made to hold production in other flush areas in California more nearly to market requirements. This is the first definite action taken in California towards curtailing crude oil production in flush areas and as such has greatly encouraged the industry throughout the country.

There is little doubt the attitude of operators who have been opposed to the conservation movement was influenced greatly by the material reduction in crude oil prices announced recently by the major purchasing companies. These operators undoubtedly expect crude oil prices to be restored to former levels as soon as the curtailment plan adopted Tuesday night is made effective and the output at Santa Fe is reduced to 150,000 bbls. daily. It is believed a readjustment upward of the crude oil price schedule in California will follow successful efforts to hold production more nearly to market requirements.

Benefits of the agreement reached in California will be felt throughout the industry. Mid-Continent operators attach considerable importance to this agreement as had California been permitted to produce crude without restriction, low prices for crude there undoubtedly would have been reflected soon in reduced gasoline prices and cheap California gasoline and crude oil would have backed up these products from the Mid-Continent and other areas in the Eastern markets and consuming centers.

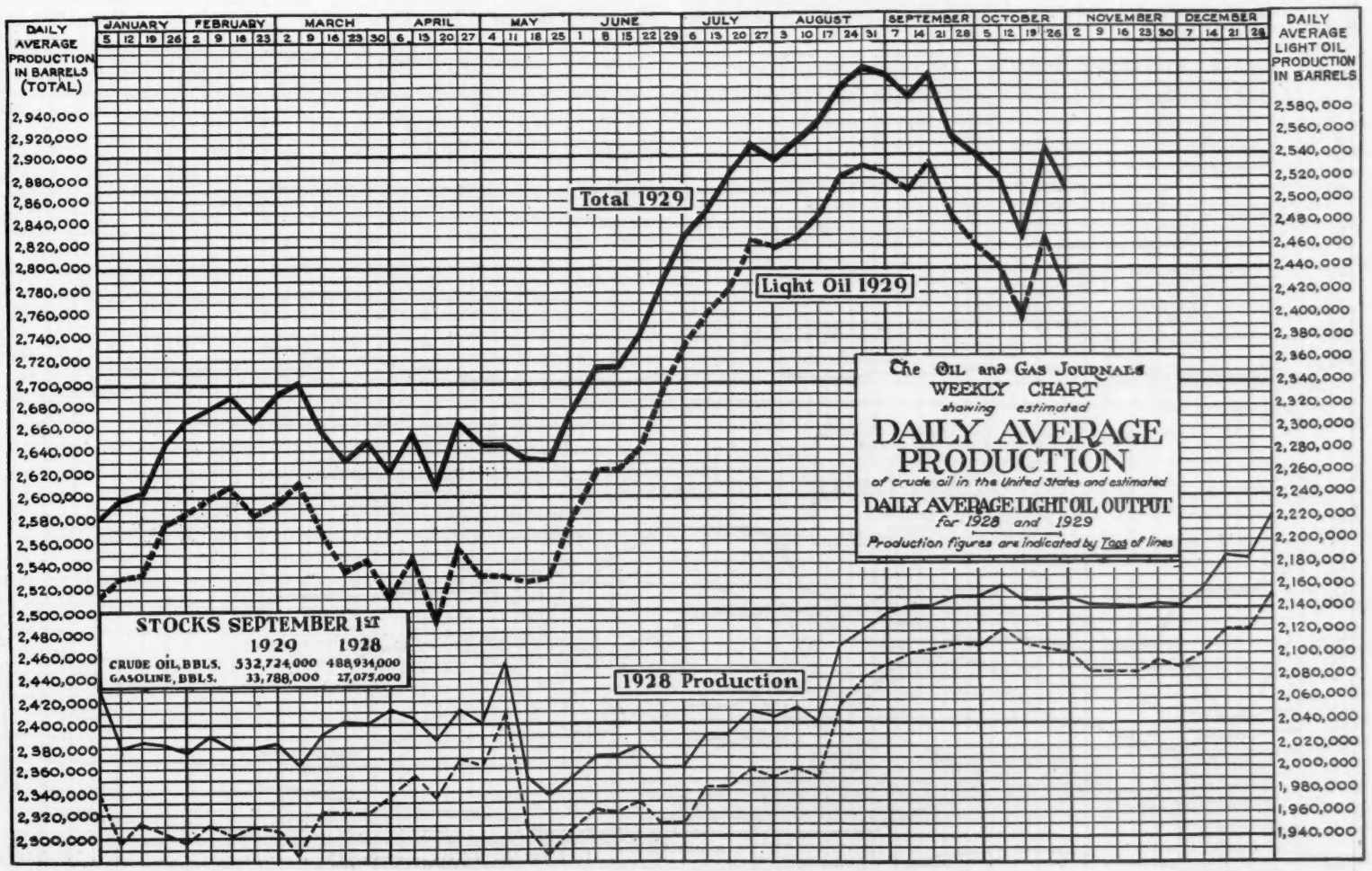
Conservation measures in other areas, especially in Oklahoma and Kansas, will be strengthened as a result of the action of California operators and fears that failure to reach an agreement in California might have resulted in lower crude prices elsewhere are removed.

PRODUCTION IN THE UNITED STATES

Estimated daily average production of light and heavy gravity oil in the United States for week ended October 26, and comparison with the previous week follows:

	Oct. 26		Oct. 19	
	Light	Heavy	Light	Heavy
Oklahoma—				
Oklahoma City	73,315	.....	75,530	.....
St. Louis-Pearson	53,605	.....	57,080	.....
Seminole	249,170	.....	267,915	.....
Northern Miscellaneous	245,110	.....	250,765	.....
Southern Fields	57,190	.....	57,020	.....
Total Oklahoma	680,390	.....	708,310	.....
West Texas—				
Hendricks	111,996	.....	118,481	.....
Yates	139,731	.....	139,459	.....
Remainder	115,226	.....	115,065	.....
Total West Texas	366,953	.....	373,005	.....
North Louisiana	32,430	5,785	33,680	5,760
Arkansas	18,705	45,215	19,085	45,730
North Central Texas	149,746	.....	149,519	.....
Texas Panhandle	102,697	.....	106,140	.....
East Central Texas	18,681	.....	19,588	.....
Kansas	110,410	.....	111,415	.....
Total Mid-Continent Area	1,480,012	51,000	1,520,742	51,490
Gulf Coast	.....	183,872	.....	182,238
Southwest Texas	.....	64,253	.....	64,634
Eastern	135,000	.....	135,000	.....
Rocky Mountain Area	73,129	.....	74,651	.....
California—				
Santa Fe Springs	270,000	.....	273,500	.....
Long Beach	166,500	.....	168,000	.....
Huntington Beach	42,000	.....	42,000	.....
Elwood	34,500	.....	30,000	.....
Ventura Avenue	61,500	.....	62,000	.....
Seal Beach	37,000	.....	38,000	.....
Remainder of State	126,000	139,000	126,000	141,000
Total California	737,500	139,000	739,500	141,000
Total United States	2,425,641	438,125	2,469,893	439,362
Grand Total		2,863,766		2,909,255

→ **Total Decrease, 45,489 Bbls. Light Oil Decrease, 44,252 Bbls.** ←



Export Purchases Aid Group 3 Market

Spread Between Low and High Gasoline Prices Narrowed Due to Heavy Buying of High Gravity Grades. Minor Changes in Other Products

By C. O. Willson

Two developments of the past week narrowed the wide spreads which have characterized the Oklahoma (Group 3) gasoline market during the past few weeks.

The predicted export purchase of high gravity gasoline materialized and this not only strengthened the grades which were bought but also brought advances from refiners who have been quoting the lowest prices on the lower gravity domestic grades. At the same time the first of the week the larger refiners in Oklahoma reduced their quotations on U. S. Motor gasoline from 7¾ to 7½ cents. This reduction coupled with the advance in the low quotations served to establish a price of 7 to 7½ cents for the U. S. Motor grades. This margin between the low and high of the market contrasts with a price of 6¾ to 7¾ cents which became effective early in October.

The export purchases in which several refiners in all parts of the Mid-Continent participated are said to have totaled approximately 18,000,000 gallons. Four companies—Carter Oil Co. (Standard Oil Co. of New Jersey), Cities Service Export Co., Sinclair Refining Co. and Atlantic Refining Co.—are reported to have shared in the purchases. The gasoline is for delivery at Gulf Coast terminals over the next 60 days. The reported price was 7½ cents for 64-66 390 endpoint gasoline and 7¾ cents for 64-66 375 endpoint gasoline. These prices were on a North Texas basis.

This buying was apparently a development of the market situation outlined in these columns last week. Gasoline storage in Oklahoma and other Mid-Continent areas, for several months has been substantially higher than the same period last year due in part to the fact that purchases of high gravity grades for export movement have been less than expected. Companies which had expected that a certain fraction of their gasoline output could be moved through export channels have been disappointed and the gasoline has accumulated in their tanks having a depressing price effect on both the export and domestic markets.

The purchases of last week by four companies which are affiliated with the Petroleum Export Association obviously were a recognition of this situation and an attempt to rectify conditions over the remainder of the year at least. The prices paid were from one-eighth to one-quarter cent above prices recently paid by independent buyers and also those connected with the Export association.

To Aid Market

Unless something develops outside the gasoline market proper such as a general price reduction in Mid-Continent crude oils, the export purchases should prove a stabilizing development in the Mid-Continent over the next 60 days. In addition to the 18,000,000 gallons purchased there is considerable high gravity material to move on contracts which were made early in the year. It is estimated that the export movement without additional purchases will total around 30,000,000 gallons before January 1.

Unless the gasoline supply is enlarged by increasing crude oil runs to stills it is generally conceded by market observers that prices should be maintained around their present levels. The danger of nullifying the improvement brought about by the export purchases by increasing the output is emphasized by both buyers and sellers in the Oklahoma market. The purchases at best cannot do more than take up the slack in the market due to the seasonal decline in the domestic demand. Many of the refiners are confident that an admittedly bad market situation has been saved until the first of the year when it is hoped that a new year will start out with an improved crude oil situation which will give the needed support to the gasoline market at that time.

Lower Domestic Prices

The lowering of the U. S. Motor price points to a more general participation in the spot market for that grade. The price of 7¾ cents which was maintained by

(Continued on Page 142)

REFINED MARKET BAROMETER

A stronger tone developed in the gasoline market at several interior refining points over the past week. A large purchase of high gravity gasolines by exporters materially helped the Mid-Continent and this improvement spread to the refinery markets in the Middle West and adjoining points. As yet the drastic reductions in California crude oils have not been reflected in a further decline in gasoline prices at coastal points. Natural gasolines continue active east of California and this situation has aided the refinery market. Kerosenes were sluggish in practically all areas with slightly lower prices effective at some points. Furnace oil distillates also were not as active as in previous weeks although the demand is heavy. Fuel oils and gas oils are strong at interior points with no change in the coastal markets. The price situation in regard to lubricants was mixed. Gulf coast pale oils were thrown on the market at lower prices but most lubricating oil stocks were firm at other points. An optimistic view of the wax market continues among the sellers and prices were higher when any changes were made.

Mid-Continent—Refinery gasoline prices in all areas strengthened by export purchases of high gravity gasoline totaling 18,000,000 gallons. Natural gasoline prices firm following a ten day period of heavy purchases. Kerosene weak. Distillates easier at slightly lower prices. Fuel oil and gas oil strong. No change in other products.

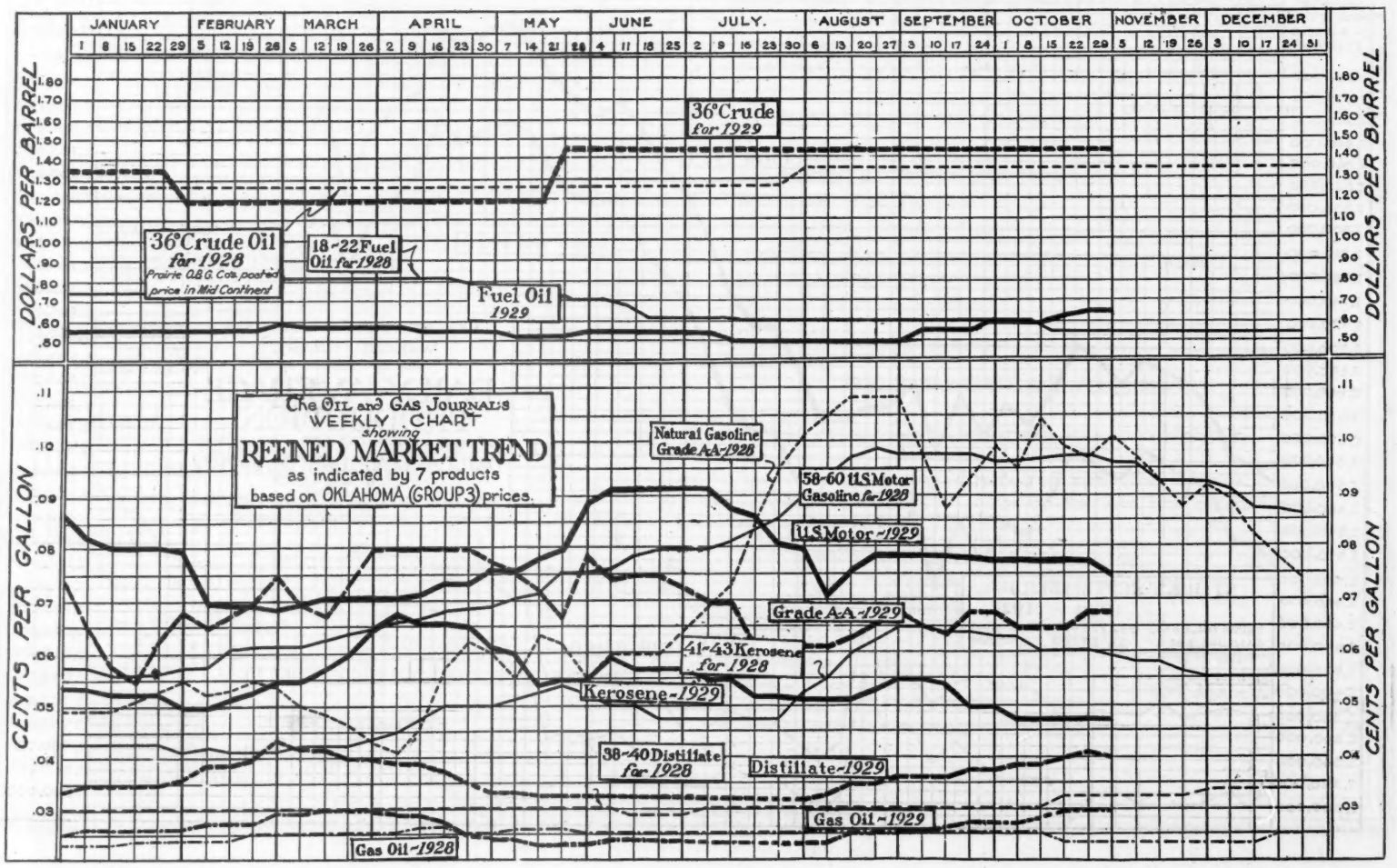
East Coast—No important price changes in any products. Much interest displayed as to probable effect of California crude oil price reductions. Routine trading in kerosene. Both crude scale and refined wax stronger. Furnace oil demand slow.

Chicago—Market generally dull although gasoline no longer available at low prices of last week. Larger refiners reduce U. S. Motor price. Distillates slow and prices lower. Zero test gas oils strong. Heavy fuel oil unchanged.

Gulf Coast—Pale and red neutral oils weak and prices lower especially 500 and 750 grades.

California—Engine distillate prices lower. No change in other products.

Pennsylvania—Bright stock prices off 1 cent. No important price changes in other products.



Agreement Is Reached in California

Santa Fe Springs Operators Will Reduce Production 120,000 Bbls. Daily. Price Cut Probably Will Be Rescinded

By L. P. Stockman

Los Angeles, Calif., Oct. 29.—The last holdout who has held up ratification of the proposal to pinch in production and limit the daily output of Santa Fe Springs to 150,000 bbls., capitulated late this evening and Umpire Paul Grim will assume command of the situation immediately and carry the order into effect as soon after November 1 as possible.

The last signature to this agreement was obtained with the stipulation that the operating committee secure permission of the land owner to cut production. The lessors involved have agreed to the proposal and everything looks promising.

The major companies have not yet signed but have indirectly sponsored the movement and are expected to ratify the proposings by reinstating the crude oil price schedule.

The recent drastic cut in crude oil prices caused operators to sit down and do a little thinking instead of continuing to jeopardize the entire oil industry by producing wide open, with the result that something tangible has been accomplished. The operators' committee sponsored a general reduction in production at Santa Fe Springs, Long Beach, Ventura Avenue and Seal Beach on the assumption that the Standard Oil Co. will cancel its recent cut and reinstate the previous price schedule. The Standard has not made any promises but there is the tacit understanding that this will be done if production is cut.

Proposed Plan

Mr. Reiter's committee tackled Santa Fe Springs and an agreement has been reached to cut production 45 per cent, based on the output for last week. One independent operator at first held out but was expected to come into the fold under certain conditions.

The agreement provides that the daily production at Santa Fe Springs will be reduced to 150,000 bbls., effective November 1, to continue in effect for a period of 90 days. This represents a cut of 120,000 bbls. per day and will undoubtedly result in the cancellation of the new price cut as this schedule does not become effective on existing contracts until 10 days after it is posted.

INJUNCTION HEARING AGAIN POSTPONED BY COURT OF APPEALS

LOS ANGELES, Calif., Oct. 29. The District Court of Appeals again postponed a hearing on the writ of injunction which it issued more than a week ago to prevent Superior Court Judge Hazlett from proceeding with the gas conservation test case pending determination of the liability of lessors. This is the second postponement by the Appellate Court as a hearing was originally scheduled to get under way yesterday. The court at that time delayed the hearing one day but today it again postponed action until November 12. This delay will automatically retard further action in the Superior Court as Judge Hazlett is enjoined from proceeding further until a decision has been reached. The writ of injunction was issued by the District Court of Appeals on motion of several independent operators who are fighting the constitutionality of the gas conservation law.

Long Beach operators are to meet Wednesday morning, October 30, for the purpose of cutting production 30 per cent in order to reinstate the old price schedule. Barnsdall and Rio Grande have already effected a 30 per cent reduction in production at Elwood and a similar reduction is expected to be made at Ventura Avenue if lessors will permit this to be done. Paul Grim, recently general manager of the George Getty Oil Co., has been elected oil umpire by independent operators and his selection has met with the unanimous endorsement of major companies.

The situation has been extremely critical for the past 60 days and this period was appropriately climaxed by a very drastic slash in the posted price for crude oil in the Santa Fe Springs, Long Beach, Ventura Avenue and Seal Beach Fields. The downward revision in the crude oil price schedule was entirely justified from an economic standpoint but at the same time it did not afford any relief from the production angle except as it might have the effect of bringing operators together on a common ground and cause them to arbitrarily pinch in production. A very concerted move is under way to curtail crude oil production 30 per cent in five flush fields regardless of the natural gas situation and this may ultimately be successful as it is the consensus of opinion that the major companies would immediately place the original price schedules back into effect.

It is interesting to note that no price reduction was made in any area except those where drilling and production activities are going full blast or have been under partial development for some time. This leads to the assumption that the drastic cut in prices was made for the specific purpose of forcing operators to restrict crude oil production in order to bring California's output into line with recent conservation activities in Texas and Oklahoma. This seems to be the most logical deduction because a 30 per cent reduction in production at Santa Fe Springs, Long Beach, Seal Beach, Ventura Avenue and Elwood would reduce State production by approximately 185,000 bbls. per day and bring supply and demand closer together. A restriction of 30 per cent in production and the re-establishment of former prices would be far more advantageous to producers than to continue producing at a maximum rate upder the present posted schedule. This has been a very strong argument and has won over a lot of independent producers to the movement under way to pinch in crude oil production to the extent of 30 per cent and progressive independents sponsoring this are hopeful of success.

Need New Storage

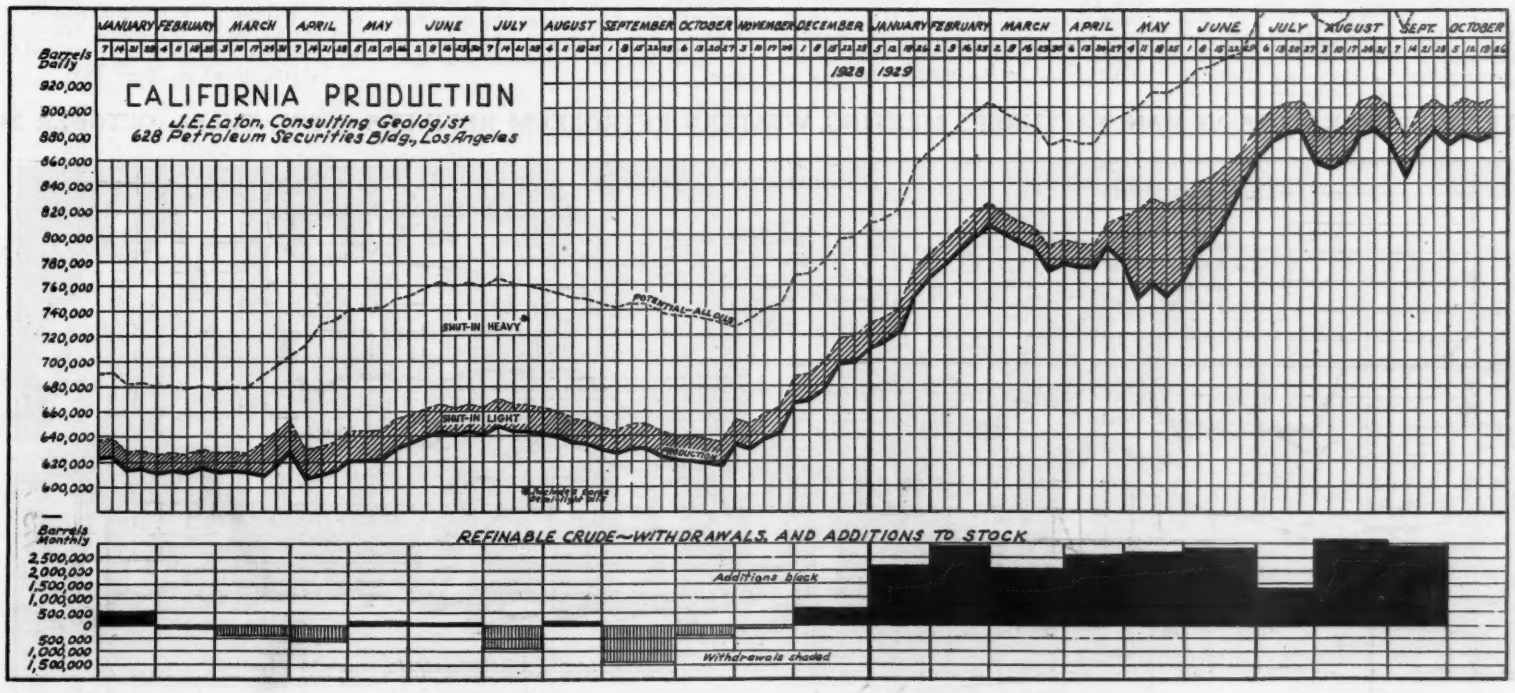
The major companies in California have been storing crude and refined oil at an alarming rate all year and in spite of the substantial price cut they will be obliged to continue adding to storage unless production is reduced, as Santa Fe Springs is almost certain to hit a much higher production if the brakes are not applied soon. Storage facilities of many companies will be filled within a very short time and several will be obliged to construct additional steel tanks or pinch in production.

The accompanying production graph for 1928 and 1929 illustrates the critical condition of the California oil industry at the present time and graphically justifies the recent severe cut in California crude oil. It is especially significant to note that the trend of production has been consistently upward since January 1 of last year. There have been one or two fluctuations during this period but the trend as a whole has been decidedly toward a higher level. State production during the past several months has been hovering around 880,000 bbls. per day and every indication points to the establishment of a new state record for production unless some means are found to artificially reduce the current output.

Santa Fe Springs Dominates

Santa Fe Springs has been the dominating factor in state production all year and is destined to continue as the premier producer for several months to come unless artificially reduced. Daily production in this field has held relatively steady around 280,000 bbls. during the past few months although it has shown minor fluctuations reflecting the completion of new wells from time to time. A check just made indicates the probability that this field will reach a substantially higher level within 30 days if drilling and production activities are permitted to go unregulated. There are at present 42 wells either right on top of the pay or actually rotating in the Clarke zone, a large number of which should be finished within 30 days. The survey shows there will be a consistent number of completions during the rest of the year and the probable maintenance of flush production at Santa Fe Springs extending over into 1930 if conditions remain wide open. Most of the major companies are working on the assumption that the gas con-

(Continued on page 142)



Refinery Operators Discuss Problems

Vacuum Distillation, Cost Accounting, Vapor Phase Cracking, Stabilization and Other Subjects Hold Interest

By W. T. Ziegenhain

In the past week the manufacturers committee of the Western Petroleum Refiners Association sponsored one of the best attended and most interesting meetings that was ever held, accounted for by the practical problems discussed in the papers presented and the questions which followed. The meetings were held in Tulsa October 28 and 29. The gum problem in gasoline proved to be of great interest again, especially following the discussion of vapor phase cracking. Another feature of the meeting was the bringing forward for discussion of refinery methods of accounting in the hope of some day arriving at a uniform method of figuring costs. Another feature of the meeting was the visit through the plants of the Producers & Refiners Corp., The Texas Company and the Mid-Continent Petroleum Corp.

Vacuum Distillation

The interest of Mid-Continent refiners in improving the quality of their lubricating oils was clearly shown by the number of questions which followed the reading of a paper on vacuum distillation by Earl Petty of the Smith Engineering Co. F. E. Holsten, vice president of the Barnsdall Refineries, Inc., asked if by vacuum distillation, a Mid-Continent bright stock might be raised sufficiently in gravity to be the same as the gravity of Pennsylvania bright stocks, assuming other specifications on the two oils were as near alike as possible. This was answered by Mr. Petty by saying the effect of vacuum distillation on gravity is small and the overhead bright stock made from Mid-Continent crude by using vacuum distillation would be only from one-half to 1½ degrees higher in gravity than a residue bright stock made from the same crude and with the same viscosity.

Viscosity has been taken as the basic specification in which to discuss and compare bright stocks made from the various crudes and under the several methods of manufacture. Because there are so many other factors which affect the quality of the finished bright stock it is difficult to make general statements in comparing the products. However, holding viscosity as the specification of most concern and making comparisons on that basis, the question was asked: "With our existing equipment for the dewaxing of bright stocks, will it be more difficult to make a zero cold test bright stock using vacuum distillation than if making it from residue stock?" Mr. Petty explained that when making the ordinary 150 viscosity bright stock there is no unusual difficulty in dewaxing the overhead stocks with the centrifuges already in most plants but that lower chilling temperatures are needed. The stock must be chilled to minus 35 degrees Fahrenheit and preferably minus 45 degrees Fahrenheit to make a zero cold test bright stock.

An interesting statement was then made by Mr. Petty in which he said recent experiments indicated that the flashpoint of an oil was influenced by the amount of heavy naphthenic hydrocarbons contained in it. These compounds were closely associated with the undesirable coloring matter contained in the oil and when removed from the oil the flashpoint was known to be raised materially. Vacuum distillation is the most economical means known thus far for the removal of this coloring matter. The removal of this coloring matter was also shown to be of principal concern because it influenced the formation of carbon on the pistons and cylinder head of the motor in use.

Relative Earnings

The question of the relative earnings from lub manufacture on vacuum distillation and the residue method was raised by L. R. Crawford, president of the Producers & Refiners Corp. He pointed out that if a petrolatum was made as a result of dewaxing the oil made by the vacuum process instead of a crystalline wax, the cost of the vacuum operation would be penalized by the lesser market value of the petrolatum compared to wax. Mr. Petty pointed out that where the wax content of the crude was very high, this would be an important point to consider but where the wax content was average or small, this difference was not a serious factor. It depends entirely upon the aim of the manufacturer. If he is interested most in making a low flash lub oil this will be of little importance, while, if he is interested most in making a maximum yield of wax, it will be of major importance.

Following the discussion of the vacuum process attention was turned to the discussion of Col. G. A. Burrell's paper on the stabilization of pressure distillate and pressure gasoline. Colonel Burrell made the general statement that as auxiliary stabilizing equipment was made a regular part of the cracking units for the stabilization of the lighter fractions as is the trend now, there will be lesser need for the ordinary vapor recovery system and in time this piece of equipment may be considered obsolete. He outlined several means of utilizing the pressure and heat from the cracking plant to effect stabilization of the distillate and gasoline. Another distinct trend, Colonel Burrell said, is the storing of the lighter liquid fractions in pressure tanks. This is being done in tanks held under 75 pounds pressure which permits the storing of gasoline containing a large percentage of butane.

Taking Temperatures

H. T. Bennett, chief chemist for the Mid-Continent Petroleum Corp. gave a very complete discussion of the importance of finding a more satisfactory thermometer for the taking of temperatures on loaded tank cars for billing. The present cut type thermometer was shown to be inaccurate when used on heavy oils especially. As an example, it was shown that when loading cylinder stock the top of the car is several degrees hotter than the middle. As the thermometer is lowered under the present procedure, the cup at the lower end of the thermometer fills as soon as it passes through the upper oil layer and that oil remains in the cup all of the time the test is made. It was Mr. Bennett's contention that in most cases, the thermometer would be more accurate without the cup. He explained an extensive experiment made at the Mid-Continent in which a tank car was filled with water and allowed to stand for several days during which time various tests were made. In the first test temperatures were taken with and without the cup on the thermometer. The time of taking the temperature was also varied, one set of results being taken after two minutes of immersion and the other after 15 minutes of immersion. The results of the tests bear out Mr. Bennett's statement that considerable improvement may be made in the thermometer and procedure since the calculated temperatures under the four conditions varied from 90.9 to 107.2 degrees Fahrenheit.

The great difference in the results of these tests was taken as a basis for the motion passed by the members of the Western Petroleum Refiners Association present to refer the question of possibly improving the thermometer and procedure of taking temperatures of loaded cars to the A.S.T.M. and instrument manufacturers.

A paper read by C. R. Wagner of the Pure Oil Co. on vapor phase cracking was followed with many interesting questions. Mr. Wagner was asked what yield of gasoline might be expected per barrel of average Mid-Continent gas oil charging stock. He said the newer units in their refineries produced from 55 to 65 per cent 420 endpoint distillate, which on rerunning produces from 50 to 55 per cent gasoline in the tanks. This yield will be greatly increased, he said, after the perfection of auxiliary equipment is completed whereby the large volume of gases made by the process are polymerized into gasoline. Experiments have been under way for more than a year and the success of the work has been assured, although no commercial unit has been built to date. It is expected that up to 70 per cent gasoline may be made per barrel of raw charging stock as a result of the polymerization of the gases. To show what factor the gas yield is, Mr. Wagner said from 1,100 to 1,200 cubic feet of dry gas are produced per barrel of gas oil charging stock or approximately 50 cubic feet of dry gas per gallon of 420 endpoint distillate. He also said a revision in their treating methods whereby dilute acid was used materially adds to the yield of the finished product.

When asked regarding the relative cost of making gasoline in vapor phase cracking and by liquid phase, Mr. Wagner said he chose not to give exact data, but after a careful comparison of results in the Pure Oil Co.'s plants, where both the vapor phase and the liquid phase processes are in operation he found the cost per gallon on the vapor phase gasoline to be slightly less. He attributed this to the better utilization of the gas from the vapor phase cracking operations. At first, he said the cost of making the vapor phase gasoline was from 10 per cent to 25 per cent higher than making the liquid phase gasoline and had been brought down to near equal at present with the probability of the cost of making the vapor phase gasoline as low as 25 per cent under the liquid phase gasoline within the next year. Another subject of considerable interest was that of refinery cost accounting presented by F. E. Holsten. Mr. Holsten gave a brief outline of the manner in which the process of arriving at a uniform system of cost accounting is developing. He told how the need for a uniform system led to

(Continued on Page 140)

REFINERY OPERATORS AT MANUFACTURERS MEETING, WESTERN PETROLEUM REFINERS ASS'N., TULSA, OCTOBER 28

Pressure Distillate Stabilization

Degasification, Fractionation and Storage Considered. Will Perform Triple Function. Removal of Fixed Gases

By G. A. Burrell and R. P. Mase
Burrell-Mase Engineering Co., Pittsburgh, Pa.*

Pressure distillate as it leaves the receiver of a cracking unit is more or less charged with gas, depending upon the nature and degree of cracking and the pressure and temperature under which the separation of gas from the pressure distillate takes place. Upon release of pressure, as the pressure distillate leaves the receiving tank of the cracking unit, and in subsequent storage, treating, rerunning, etc., the gas is released and escapes, taking with it appreciable quantities of gasoline which are thus lost.

In some cracking systems pressure distillate is discharged from the rundown tanks to untreated storage and then pumped through a continuous treater or to a batch agitator and thence to treated storage. From the treated storage it is pumped to a rerun still, then from the rundown tanks of same to the sweetening unit and from there to finished storage. This is done directly in the case of a continuous treater, but if a batch agitator is used for sweetening the process is lengthened and more handling is required. Finally the finished gasoline is pumped to the loading rack and tank cars.

All the while losses of gasoline are occurring, depending upon the amount of handling, the atmospheric temperature, and the extent to which expedients are employed to minimize losses, such as type of tankage employed, use of a vapor recovery plant, and degree to which various units in the refinery are hooked up to the gasoline recovery plant. These losses may range up to 4 per cent of the pressure distillate handled.

A further disadvantage of handling pressure distillate charged with gas lies in the difficulty of pumping it in hot weather.

A Triple Function

Briefly it can be stated that degasification, fractionation and pressure storage of light fractions will perform a triple function, as follows:

(a) Degasify the pressure distillate (including propane removal).

(b) Fractionate a light overhead cut from the pressure distillate that does not need acid treatment. This fractionation raises the boiling point of heavy cut so evaporation losses are greatly reduced.

(c) Hold the light cut under pressure storage so that light gasoline fractions will not be lost during this storage.

Enlarging a bit on the first of the foregoing functions the benefit of fixed gas removal is quite evident in its broad aspects. The benefit from complete removal of all propane, the heaviest of the true fixed gases, is now fully realized since for each per cent of propane excluded from finished gasoline, 3½ per cent of butane may be added, at the same time retaining the same vapor pressure of finished product. This follows from a consideration of the relative vapor pressures of these two hydrocarbons.

For those refineries that do not have vapor recovery plants, but want only pressure distillate degasification and fractionation, a different procedure is adopted than where a vapor recovery plant will treat vapors from these units.

Vapor Recovery Plant

There will be first discussed a degasification and fractionation unit in combination with a vapor recovery plant. In degasifying pressure distillate, gas is taken off the receiver, say at 150 pounds, and sent to a vapor recovery plant. This gas will contain up to 1.0 gallon of gasoline per 1,000 cubic feet of gas. The pressure distillate is put into a degasifying column. This column operates at about 30 pounds, the pressure distillate being put into the column over the top plate. A mist extracting plate or unit should be provided above the top contact plate. With some pressure stills expanding the distillate from high pressure to a lower one (150 pounds down to 30 pounds) in the column, cools it and furnishes lowered temperature for the top of the column. Heat must be furnished for the base of the column, and this is provided by a closed steam bundle, preferably using exhaust steam from the hot oil pumps. The gas passing overhead is brought to vapor pressure-partial pressure equilibrium with cool pressure distillate at 30 pounds pressure. The gasoline content of this gas is, therefore, comparable to that of the gas ordinarily leaving a 30-pound separator.

This gas flows through the vapor recovery plant without being compressed.

Bottoms from the column (degasified pressure distillate) may be cooled and sent to storage. The hot bottoms, however, are preferably flashed into a second column at low pressure so as to take overhead a fraction of same (5 to 30 per cent) that does not need acid treating. Color, gum and odorous compounds more or less concentrate themselves in the heavy fractions of a distillate so that frequently a cut can be made and only the heavy portion of the distillate be acid treated. By operating this second column at low pressure, part of the sensible heat of the liquid leaving the reboiler of the first column is used to evaporate the light cut. Additional heat (closed steam) may be needed for the base of this second column if a considerable fraction of the pressure distillate is sent overhead. A condenser of ample surface is provided for condensing the overhead cut of the second column. Part of the condensate thus formed is returned to the top plate as reflux, while the main stream is pumped to pressure storage. On its way it should be sweetened in a small continuous treater.

Preferably the light cut should be reunited with the heavy cut just prior to shipment. The blending can be done in the same manner as is ordinarily done when gasoline is blended with absorption gasoline.

The heavy cut from base of second column is cooled and sent to a run tank and is handled thereafter just as pressure distillate is now handled.

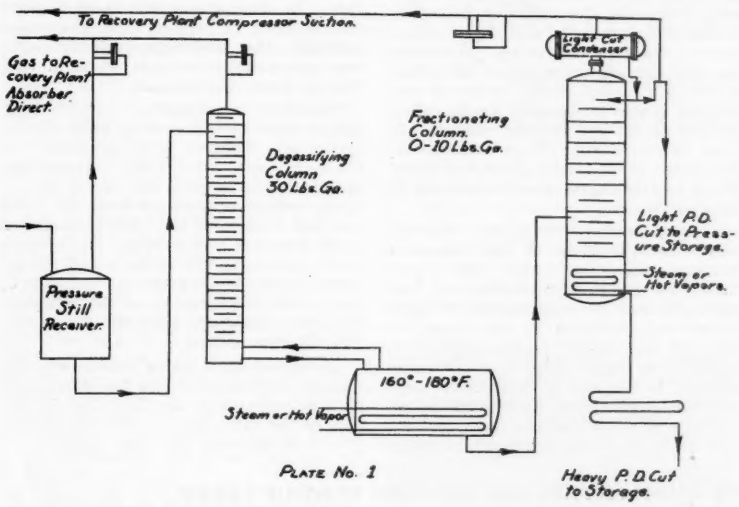

To Recovery Plant Compressor Suction.
Gas to Recovery Plant Absorber Direct.
Degassifying Column 30 Lbs. Ga.
Fractionating Column. 0-10 Lbs. Ga.
Light Cut Condenser
Light P.D. Cut to Pressure Storage.
Steam or Hot Vapors.
Pressure Still Receiver
160°-180°F.
Steam or Hot Vapor
Heavy P.D. Cut to Storage.

PLATE No. 1

Principles of Rectification

A diagram for a low pressure stabilizing-fractionating unit is shown in Plate 1.

Since the function and operation of the unit is largely one of two stage fractionation, i.e., of stripping gas from a liquid in the first colum and of removing light pressure distillate from the heavy pressure distillate in the second one, ordinary principles of rectification have to be followed. Enough heat must be put into the base of the column to drive overhead the light fraction. The column must be of sufficient diameter to provide the necessary capacity and there must be enough plates for separation of the fractions. The necessary amount of reflux must be furnished the column, temperatures must be maintained as uniformly as possible, flow into the column must be constant and velocities must not be too high. These are requirements of all columns, no matter what substance is being rectified.

Moderate heating is required for the base of the degasifying column (the 30-pound one). The temperature must be such as to drive out the gas at the operating pressure. The temperature ordinarily need not be higher than 180 degrees for degasification at 30 pounds. Pressure distillate enters the column at about 60 degrees Fahrenheit. Hence the temperature must be raised 180 degrees — 60 degrees = 120 degrees Fahrenheit. If one assumes 1,000 bbls. of pressure distillate per day this is the equivalent of 11,000 pounds per hour. Hence there is needed $11,000 \times .50 \times 120 = 660,000$ B.t.u. per hour for heating above. In addition, we must evaporate approximately 10 per cent of the liquid in order to drive out the gas.

$.10 \times 11,000 \times 125 = 137,500$ B.t.u. per hour for this purpose or a total of substantially 800,000 B.t.u. per hour. To this we must add about 10 per cent for heat loss, giving a total of nearly 900,000 B.t.u. per hour. If low pressure steam is utilized for heating this is equivalent to 27 boiler horsepower.

Most hot oil high pressure pumps used with cracking plants are direct steam driven and often this steam is wasted. As it leaves the pumps it contains 95 per cent of the heat of the steam. The steam required for the hot oil pumps of some cracking units is approximately 125 pounds per barrel of pressure distillate. From this it becomes apparent that for each 1,000 bbls. of pressure distillate per day produced there will be available on the order of 150 boiler horsepower of low pressure steam, while only 27 is needed for the pressure distillate reboiler.

Temperature

The temperature at the top of the column due to the expansion of the pressure distillate into it will be of the order of 60 degrees Fahrenheit. The gasoline escaping overhead with the gas is only that necessary to saturate the gas in contact with the pressure distillate at the temperature and pressure (30 pounds and 60 degrees Fahrenheit) of the latter. This will be of the order of 1½ to 2½ gallons per 1,000 cubic feet and goes to the gasoline recovery plant to be recovered.

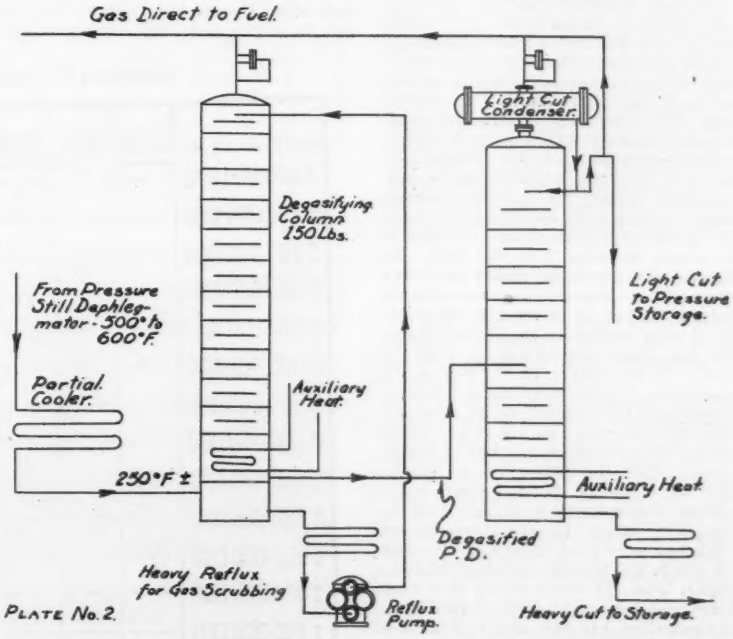


PLATE No. 2

The stabilized pressure distillate now enters the second or fractionating column at a temperature a litle less than 180 degrees Fahrenheit. Enough heat has to be put into it to fractionate overhead up to say 30 per cent of the pressure distillate. If only a few per cent of the pressure distillate is taken overhead, the sensible heat already in the pressure distillate (180 degrees Fahrenheit) will be enough to drive overhead the desired fractions.

From some very sour pressure distillates it is possible that no tops can be taken off for the whole pressure distillate

(Continued on Page 138)

*Before Western Petroleum Refiners Association, Tulsa, October 28.

The Economic Storage of Crude Oil

Present Situation Analyzed by Standard Oil Co. of New Jersey. Aspect of Overproduction Entirely Changed*

With much of 1929 behind it, the petroleum industry is almost on the eve of its annual stock taking. Events which have shaped the course and policies that have determined the extent of its prosperity are already in the past and it is not too soon to discern the outline of the picture that the year in retrospect will present.

Despite kaleidoscopic changes of the last decade it appears that in its essentials the 1929 showing will not be greatly different from that of previous years or at least greatly different from the trend in that period. There will be found in it the familiar sequence of events which has characterized the conduct of the industry since the inauguration of the policy of carrying large accumulations of reserves above ground. This policy has been regarded as an insurance against a contingency of depleted or insufficient supply, a contingency which it would seem the industry has rendered virtually impossible of occurrence. The fact that it has not arisen nor is likely to arise and that every year's progress in the scientific exploration for petroleum fields and in the increased extraction of their valuable constituents is rendering it more remote has been ignored when the industry has been making provision for the current requirements of its markets. The existence of these reserves and the costly burden they have imposed have in the past failed to prevent advances in the posted prices of crudes when a temporary shortage threatened. With almost mathematical precision there has resulted from these advances a stimulus of crude producing operations which in turn have still further augmented the stocks of crude and finished products above ground to larger and more unwieldy proportions.

Familiar Cycle

The cycle of an advance in the crude market, followed by an acceleration of drilling operations and a resultant steadily mounting volume of stocks in storage has been already faithfully repeated in 1929. The extension of pipe line facilities increased the quantities of Mid-Continent crude available to the refining centers and in anticipation of large consumption during the summer season, stocks of this crude were drawn upon during the months of April and May to the extent of some 2,500,000 bbls. In May the Mid-Continent posted price was advanced. In May and June the advance was reflected in an increase in the number of wells drilling in the United States over the same two months of 1928 by nearly 15 per cent. There were 4,478 completions in June and July of this year as against 3.779 completions in June and July of 1928 and in the first seven months the completions reached 14,143 as against 11,999 in 1928. As a result, when the record of the year comes to be written, the industry will find itself in possession of a reserve above ground which has more than tripled in 10 years and which will not fall far short of 700,000,000 bbls. In other words, in a year of unparalleled consumption of petroleum its production has run ahead of all domestic and export requirements at the rate of more than 5,000,000 bbls. a month.

Economic Balance

Petroleum stocks in storage were originally accumulated for utilization in time of need. They were intended to level off the high places and fill up the low ones, thus creating stability of price and certainty of supply. Their economic function is that of a balance wheel which in periods of scarcity or oversupply insures against extreme fluctuation in price. The greater part of them went into tanks on a basis of cost above the level of prices which has prevailed most of the time since or that is in effect today. It was a natural expectation that they would be disposed of at cost or at a profit. But an actual shortage of current production has never developed, hence the theory that since the owners of the stocks would be reluctant to draw on them at less than cost, prices would go to permanently higher levels has proved unsound. At times individual necessities have carried prices to levels approximating the cost of crude in storage, but for the most part advantage has not been taken of these situations to draw upon stocks and price increases have again stimulated production of more crude. It is becoming more apparent that a sound basis of crude prices cannot be established on the cost of crude already in storage but must depend upon what the industry can obtain for its products. Almost one-half of the contents of the crude in storage is fuel oil and regardless of its percentage of the original cost, this fuel oil content cannot, under existing conditions, be sold for more than the price obtainable in competition with coal. As a matter of fact, it has been selling far below the equivalent coal value.

Nearly 10 years ago, in 1920, the American industry was carrying 203,000,000 bbls. of crude oil and products in storage. This was appraised as being ample reserve to tide the country over any probable shortage. In 1924, in a discussion of "Overproduction. Its Causes and Effects," the Lamp called attention to the fact that these stocks had more than doubled and amounted at that time to 530,000,000 bbls. In the intervening years the increase had been rapid and sustained until it reached the record figure mentioned. What should be the eventual utilization of these stocks was certain to receive more and more consideration as their size increased. The attitude of the industry in this regard is influenced by certain factors which have arisen within recent years.

Work of Refiners

These factors largely represent the contribution of the refining branch of the industry to overproduction. Had refiners been content with the obsolete practices of 10 years ago there would be no surplus overhanging the markets today. The technique they developed has made it no longer possible to measure the reserves of gasoline held for the protection of the future consumer in terms of the sweet crudes available. Successively, the refiners have solved the refining problems of the so-called heavy or sour crudes and have given them a value in direct proportion to their naphtha content comparable to the Mid-Continent crudes.

While some sweet crudes possess a special value for the manufacture of lubricating oils and specialties, further improvement in processes will tend to eliminate or diminish this value. Moreover, from the sour or heavy crudes the refiners are now manufacturing a motor fuel which by reason of its lower knock rating appeals to large and growing markets. It is fair to assume that the potential naphtha content of all crudes above and below ground represents the gasoline reserve of the industry.

Of equal importance is the influence upon future markets of the increased cracking operations and the large straightrun yield being secured of late years. On another page appears a chart —originally published in the Lamp in 1924 and now revised to date—which illustrates the trend. The chart has been projected to the end of 1930 and it portrays strikingly the extraordinary extent to which these operations have reduced the amount of crude necessary to maintain as a safeguard against future consumption. Going back to the period from 1916 to 1920 the consumption and exports of gasoline is shown to have made an average gain of 21.92 per cent. In that period the refinery gasoline output was 23.99 per cent of the crude run. In 1916 cracked gasoline was 12 per cent of the total manufactured, which meant 6,000,000 bbls. In 1920 it was 17 per cent, the extra 1 per cent adding 14.000,000 bbls. By 1928 it had jumped to 32.5 per cent or 122,000,000 bbls.

Limiting Crude Demand

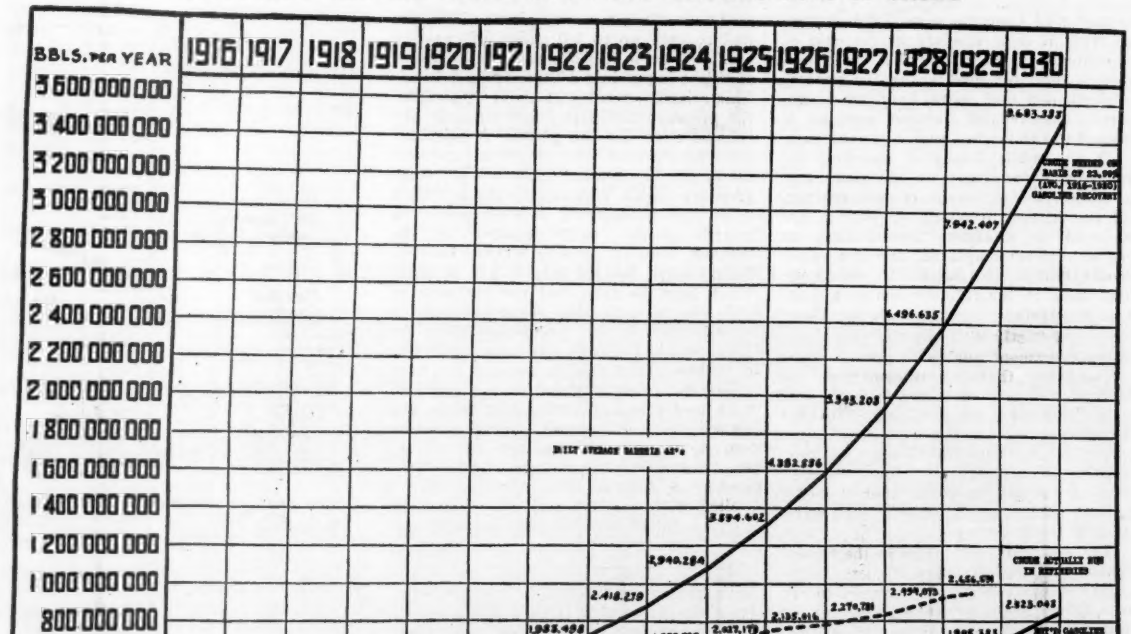
If the average gain of 21.92 per cent in the consumption and exports of gasoline which existed from 1916 to 1920 had continued in the same ratio until 1928 and if the refinery gasoline output—23.99 per cent of the crude run—had remained stationary, the refineries last year would have required 6,496,635 bbls. of crude daily to provide for their gasoline markets. In other words, had there been no improvement in refinery and absorption processes the producers probably could not have supplied enough crude in that year to meet requirements.

However, consumption after 1920 gained more slowly and by 1928 the increase was down to 11.44 per cent. In the eight years after 1920, however, the improvements in processes raised the refinery output of gasoline from the 23.99 per cent average of the 1916-20 period to 35.55 per cent. The larger straightrun yield secured by the refiners and the increase in cracking operations reduced the daily crude requirements of the refineries from the theoretical 6,496,635 bbls. to 2,494,073 bbls. actual.

The possibilities which tomorrow's augmented yields from crudes hold for the future is indicated by the fact that in August of the present year the refinery out-

(Continued on Page 112)

ESTIMATED GASOLINE CONSUMPTION AND REFINING RUNS OF CRUDE



The above chart shows the estimated gasoline consumption to 1930 and the amount of crude necessary to supply it on the basis of 1916-20 crude runs and yields. The great difference between the dotted line, showing the crude actually run, and the solid line, estimating the amount of crude needed, represents two factors not considered important until after the year 1920, namely, absorption gasoline and gasoline made by cracking.

*From The Lamp.

Survey of Gasoline Service Stations

Department of Commerce Preparing Questionnaire to Obtain Basic Facts About Distribution of Petroleum Products

By Charles E. Kern
Washington Bureau, The Oil and Gas Journal

WASHINGTON, D. C., Oct. 28.—The Department of Commerce is preparing to make a study of the business of gasoline service stations in the Southwest which includes the States of Arkansas, Louisiana, Mississippi, Missouri, Oklahoma and Texas, and desires to have all assistance that may be obtained from the oil industry in that section so that this survey of conditions may be successful in every respect.

This survey is a part of the general studies of distribution which are being made by the Bureau of Foreign and Domestic Commerce and which eventually will embrace the entire country. The various major commercial activities of the nation will be considered before this work is completed.

In order to gather data in respect to gasoline service stations in the Southwest a questionnaire has been prepared and it is designed by this means to obtain every variety of important information regarding the location and operation of service stations.

To Aid Industry

The Department of Commerce is undertaking this labor in a friendly spirit toward the oil industry and hopes to produce a report that will be helpful in many respects to all companies and individuals that sell gasoline to the public.

In order best to accomplish this result it is realized that the oil industry itself is the most reliable source of information by which the department not only will be able to make its inquiry practicable but also will be assisted by suggestions for the best methods to guide it in distributing its questionnaires to these service stations.

It is believed to be desirable in formulating its plans to send the questionnaires to oil companies that operate numerous stations so that these companies may gather necessary facts from their records and from those in charge of their stations. In the case of service stations operated by individuals the questionnaire will be sent directly to them.

Several plans for distributing the questionnaire are being considered but suggestions will be welcomed as to the best method to follow in obtaining its widest possible dissemination among the gasoline distributors with the least possible amount of duplication and expenditure of effort.

Strictly Confidential

The department wishes to have a clear understanding that all information received by it will be accepted as confidential in the same manner that the Bureau of Mines accepts monthly reports of production and refining used as a basis for compiling such statistics. The information will be so assembled that no one will be able to trace any of it to a particular station or company. The object of the report will be to place in the hands of the industry statements of methods of conducting these stations in respect to all elements of business management as a guide for future operations for all of them.

The locations of stations will show their relationship to traffic and the general plan of their constriction with reference to all facilities provided.

It is desired to show the bulk of sales during 1929 and the gasoline dispensed. It is therefore planned to distribute the questionnaire January 15, 1930, it being presumed that 1929 figures will be available by that date.

The same kind of information will be sought in relation to lubricating oils and greases and to marketing policies in respect to the hours during which the station is open for business, discounts, advertising mediums, number of employes, etc.

If other kinds of business is carried on at the station it is desired to have an enumeration respecting each of them.

Policies in respect to methods for obtaining trade will be sought and it will be desired to know how the station is financed, the capital investment, yearly operating expenses, and what percentage of the profits are made from the several branches of the business carried on.

This particular survey is one of the studies delegated to Charles B. Eliot, Edward F. Gerrish, being in charge of the entire southwest business survey.

In addition to the questionnaire, an effort will be made to have a road survey covering convenient sections of the area being studied.

Tentative Questionnaire

The questionnaire here presented is practically complete but it is tentative to the extent that the department desires comment and suggestions for its improvement in order that it may be as comprehensive and definite in the information called for as possible. All readers of The Oil and Gas Journal should accept this announcement as a definite invitation to study this questionnaire, note any suggestions that can be made for its improvement and address them to Charles B. Eliot, in Charge of Petroleum Studies, Department of Commerce, Room 616, Hurley-Wright Building, Washington, D. C.

The proposed questionnaire for gasoline retailers follows:

1. Location

1. Name of owner.....
2. Name of operator.....
3. Firm name.....
4. Address.....
   - Street.....
   - City or town.....
   - County.....
   - State.....

(Continued on Page 112)

Aluminum Foil to Combat Corrosion

New Product Can Be Applied to Tank Roofs, Pipe Lines, Tank Cars and Other Equipment. Holds Down Evaporation

By L. G. E. Bignell

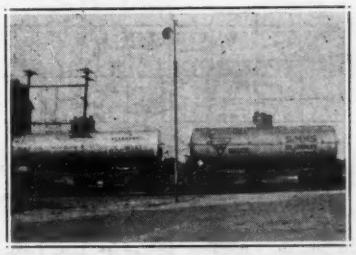
In seeking for a means of combating the effects of sulphur, hydrogen sulphide gas and moisture on iron and steel equipment used in the various industries, particularly the petroleum industry, a product of aluminum has been used with considerable success and shows promise

Applying adhesive compound to deck of tank preparatory to laying aluminum foil.

of having a wide application as its use becomes more generally known to the engineers and field men.

This new product is known as aluminum foil and is metal aluminum rolled to thicknesses varying from .002 to .005 inches and is now obtainable in widths of 18 inches.

To apply this material to any surface it is recommended that the surface be cleaned to a reasonable degree, but it need not be sand-blasted or pickled as recommended for painting, and after cleaning a viscous form of adhesive is applied with a brush and the aluminum foil then rolled over the adhesive and the air bubbles pressed from under the foil.



The car at the left is covered with aluminum foil and the other is aluminum painted.

The adhesives used up to this time can be divided into two classes, one class being soluble in gasoline and therefore not suitable for places where the coating will come in contact with oil or any of its products, and the second class of adhesive being insoluble in crude oil or any of its derivatives is therefore suitable for such places as tank interiors, and other equipment used to handle oils where change in temperature is not very great.

Studying Adhesives

This problem of developing suitable mediums for sticking the aluminum foil to surface of various characters is being studied by various manufacturers of paint and similar classes of coatings, and it is thought that new types of adhesives will shortly be developed that will permit of wider use of the aluminum foil.

The use of aluminum paint, made from aluminum bronzing powder with some

Laying aluminum foil on deck of tank. Man at right is rolling foil over surface and the man at the left is pressing it down.

suitable vehicle, has demonstrated the value of this metal for exterior coatings of oil storage tanks and reports have been prepared by the United States Bureau of Mines on tests conducted by it to give the relative results secured by coating tanks with several kinds of paint, and short tests that have so far been completed using aluminum foil indicates that it has even greater possibilities for coating tank roofs than the aluminum paint.

Lowering aluminum foil covered pipe into ditch.

In the Winkler County Field in West Texas four 55,000-bbl. riveted steel tanks have been selected by one of the major oil companies for a series of tests.

One of these tanks is without coating of any kind and is used as a check tank, while the other three are coated, one with aluminum paint all over, and another tank is painted red on the shell up to within about 4 feet of the deck, and this upper 4 feet of shell and the deck is painted with aluminum paint. The fourth tank is aluminum painted on the body but the deck is covered with aluminum foil.

The comparative temperatures in three out of four of these tanks is given in the following table:

Other Uses for Foil

Another use suggested for this alumi-

(Continued on Page 111)

TEMPERATURE TESTS ON 55,000-BBL. TANKS, HENDRICKS POOL, WINKLER COUNTY, TEXAS, JUNE 20 TO SEPTEMBER 15, 1929

	Roof temperature mid-day July 15 (deg.)	Total change vapor space July 15 (deg.)	Roof temperature mid-day Aug. 15 (deg.)	Total change vapor space Aug. 15 (deg.)
Unpainted tank	156	44	155	39
Aluminum painted tank	121	29	125	38
Aluminum paint on shell, aluminum foil on roof	112	22	120	38

Note.—These temperatures are excerpts from 24-hour temperature readings taken at intervals of 30 days and are expressed in degrees Fahrenheit.

Does Rainfall Increase in Oil Fields?

Interesting Theories Advanced in Support of Familiar Supposition Which However Is Not Sustained by Records

By L. G. E. Bignell
Petroleum Engineering Editor

The theory has often been advanced that rainfall is greater in a district during the period of developing oil and gas fields than usual for that particular area, and it is inferred and often asserted that the extra precipitation is in some way caused by the drilling activities, and the bringing in of new wells.

It may be well first to review some of the theories advanced pertaining to weather changes and the following data are taken largely from standard works on this subject.

Starting with a comparison of the theories of causes of rainfall as set forth in old and more recent textbooks on physics, in an old book by Wentworth, it states:

"Rain and snow fall when the air happens to contain fewer dust particles than usual, and becomes overcharged with vapor, each dust mote gets a thicker coating of water, and is transformed into a very small drop of water heavy enough to fall rather fast. These drops as they descend unite and form larger drops which fall still faster. If the air between them and the earth is nearly saturated, they increase in size by the condensation of more water upon their surface, and finally reach the ground as drops of rain.

"The cooling necessary to cause rain is due sometimes to the mixing of masses of air at unequal temperatures, but more often to the ascent and consequent expansion of a mass of warm, moist air. When, for instance, a warm sea wind laden with moisture blows against the side of a mountain, the air rises, and is cooled so rapidly by expansion that the rain descends in torrents."

The above is a statement of a physicist thirty years ago, and below is another quotation from a more modern version of the phenomenon:

"Every droplet of condensed moisture contained in a cloud of fog has a minute nucleus. This may be a particle of dust, a microscopic bit of carbon which rose from a fire in the form of smoke, or an ion of one of the elements found in the atmosphere. Raindrops form when a sufficient number of floating droplets coalesce to make a weight heavy enough to pull the drop to the ground. In falling through the air the raindrops wash it clean of impurities; the latter nourish plants and fertilize the soil. Showers refresh the earth not only by furnishing moisture, but also by restoring to it elements which it lost in sustaining plant life."

Gas Escaping In Air

Apparently the same basic idea is contained in both articles but the later version includes other than dust particles as the nucleus for the rain drop and mentions one of these as being bits of carbon, but specifies it should come from a fire. It is a well known fact that during the bringing in of new fields enormous amounts of gas escape into the atmosphere, or at least that was the practice before the days of conservation, and it would seem possible that some of these hydrocarbon particles might have their effect in gathering moisture from the atmosphere, and thereby increasing precipitation.

Atmospheric dust is important for four reasons: (1) It is one of the chief causes of haze; (2) it probably serves as the centers of condensation for all fog particles and raindrops; (3) it is the cause of sunrise and sunset colors; and (4) it is the cause of twilight.

The sources of atmospheric dust are the particles blown up from the surface of the earth by the wind, the dust and excreta from volcanic eruptions, and the residue from meteors, which are burned and disintegrated in their swift passage through the atmosphere (sometimes at velocities of 40 to 50 miles per second).

Streams and Thunderstorms

Other theories advanced for thunderstorms involve the influence exerted by a stream such as the stream divides the storm, sometimes the storm follows the river, sometimes the river dissipates the storm entirely, and again the river intensifies the storm.

These various theories all have their advocates and are based upon some well established phenomena and what the river does to the thunderstorm depends upon the size of the river, the temperature of its water, the temperature of the air above the water and upon other related factors, many of them varying from year to year and thus the same river will vary in its influence upon local showers and give rise to a diversity of opinions such as described above.

The only connection between the influence of the river upon thunderstorms and oil fields is the fairly well established fact that most of the older oil fields of size have been located near bends in rivers, and consequently the combined influence of water and large quantities of gas from flowing wells might cause heavier precipitation during periods of flush production than would occur normally.

Dr. Alfred Smith, of the University of California, states that the texture of the soil does not affect temperature or rainfall conditions.

This report is of interest as to the discussion of rainfall in the Permian Basin area of West Texas to be taken up later in this article.

The literature regarding weather mentions many things as effecting rainfall but nothing specific that would assist in the solution of the problem outlined at the beginning of this article. Therefore it has been decided to make an actual comparison of the weather conditions in a number of our largest oil fields during periods of flush production using for this purpose climatological data prepared by the United States Weather Bureau and collected from those stations nearest the oil field in question, and production records for the years of flush production.

In Pennsylvania Fields

Starting with the old oil fields of Pennsylvania which were reported as being exceedingly muddy during the development periods and tracing on down to the conditions in Permian Basin area in West Texas during 1928, an attempt will be made to correlate the data in such a manner that some conclusions can be reached as to whether there was anything about the bringing in of oil and gas wells that could in any way have a definite effect upon the precipitation at that time of development.

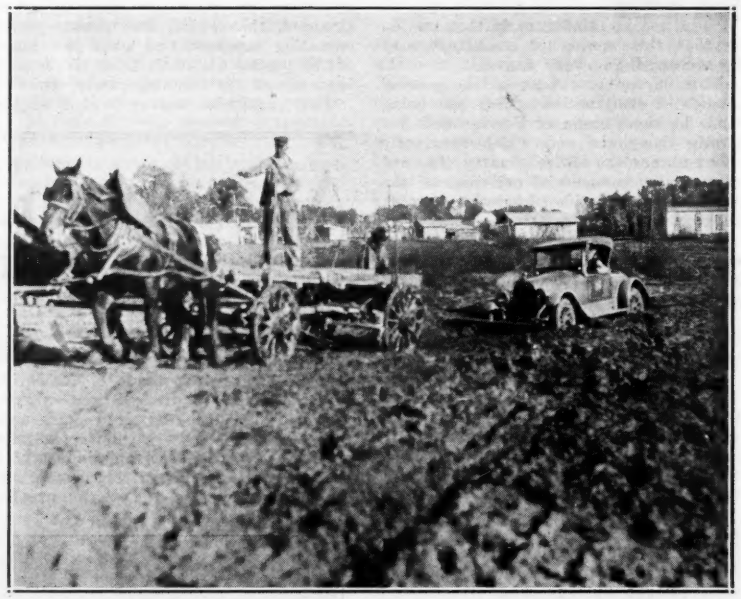
The records show that in 1859 the Pennsylvania and New York areas marketed about 2,000 barrels of oil and for the next five years this increased to about 3,000,000 barrels in 1862 and averaged around 2,250,000 barrels for the other years.

This was a shallow field and the oil was not accompanied by great quantities of gas so there is nothing in the nature of that element to have any particular effect upon the weather.

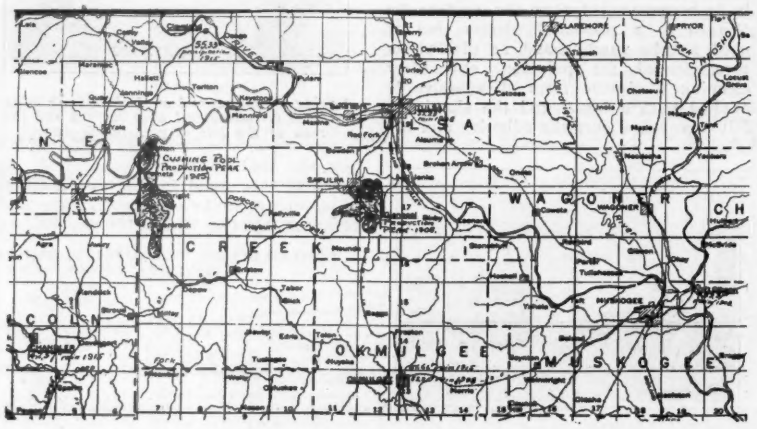
Climatological data available does not cover the area in which the first fields of Pennsylvania were located, but a study

(Continued on Page 153)

A scene that is familiar to most oil men—a bit of bad road near Wewoka, Okla.

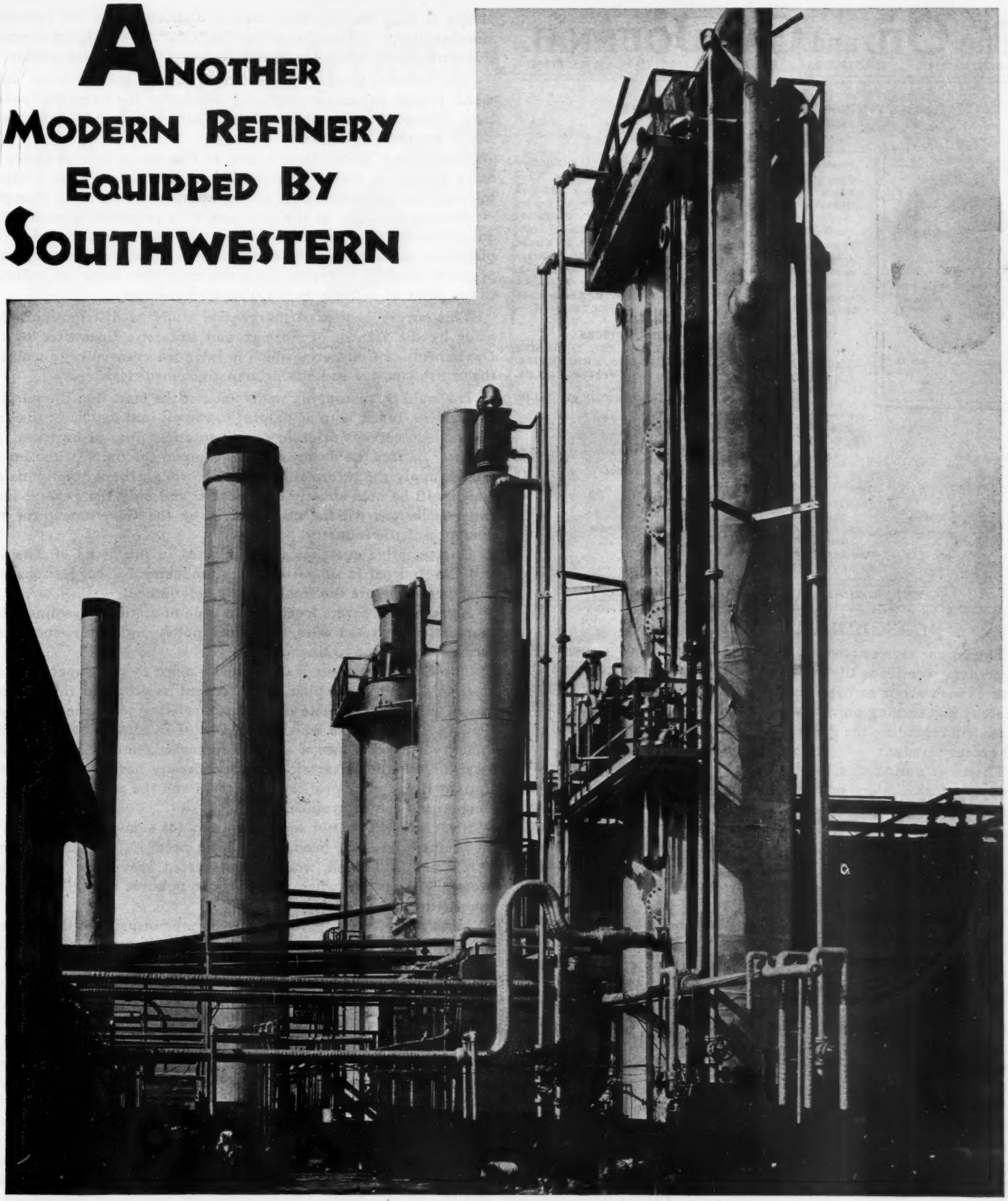


Towing automobile through mud in Tohkawa district.



This map shows relative positions of Glenn and Cushing oil fields and the meteorological stations at which rainfall was recorded.

ANOTHER MODERN REFINERY EQUIPPED BY SOUTHWESTERN



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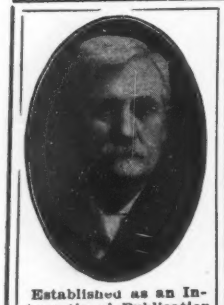

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GASOLINE QUESTIONNAIRE

The corner service stations have replaced the corner saloon and the corner groceries as the most frequent feature of our urban architecture, with about as little information available relative to their necessity and earning power as the individual operators of the older places had regarding the general marketing conditions in the liquor and grocery trades.

The same notion that led so many to believe they could make money opening a saloon or a grocery store seems to have been transferred to the filling station. And the rapidity with which such places changed hands is being duplicated in gasoline marketing.

There is a lot more to merchandising these days than opening a store or station. The growth of chain stores has been built mainly on knowledge of conditions, efficiency in buying and economy in operation.

The overdevelopment of gasoline outlets has been proof of the lack of that knowledge of marketing conditions in the oil business. The fundamental information has not been available and expansion programs have been made largely in the dark.

The trend during the past few years has been towards company-owned distributing facilities, assuring as far as possible control of the output until the product is placed in the hands of the consumers. But this alone will not get us anywhere if we continue to over-expand these facilities.

The recent survey of marketing conditions in Tulsa reflected this situation: too many distributing units, and too large investment to permit profitable returns except to a few. The law of averages catches the industry and the exceptions who show a profit make it only at the expense of somebody else.

The same sellers who make a profit in one district where others lose may find that elsewhere they are the losers and someone else is making the profit.

It is a fundamentally unhealthy condition where the multiplicity of outlets out of all proportion to the limits of the volume of demand handicaps the whole industry at the start.

Further analysis of the Tulsa survey showed that while Tulsa had expanded rapidly as a consumer of gasoline and other products the expansion of marketing facilities had been even greater and the gallonage per unit of distribution was becoming less and less.

From the industry's standpoint this has been aggravated by inability to pass the increased cost of distribution to the consumer since naturally this condition inevitably develops a highly competitive situation in which the market is dominated by price-cutters.

The industry needs definite knowledge of market bases upon which to plan expansion programs. Several of the larger companies have attempted to assemble such data but even their information is not as complete as desirable.

The United States Department of Commerce now proposes to make a complete survey of gasoline distribution in a large consuming area and has selected the southwestern territory as an example.

Starting the first of the new year it is proposed to send out a questionnaire to obtain timely and profitable data covering all phases of operations in the distribution of gasoline and petroleum products used by motorists from the time they leave the refinery to the point of delivery to the ultimate consumer.

This survey is part of the general study of distribution being made by the Bureau of Foreign and Domestic Commerce of the Department of Commerce which is intended eventually to embrace the entire country and the principal commodities.

It should be thoroughly understood at the start that the purpose of the department is to be helpful to the oil industry as in the case of previous surveys made in regard to other lines of business. As a matter of fact the department relies upon the units in the industry to supply the information desired through these questionnaires which will be held strictly confidential and only the general facts and conclusions will be made public by the Government for the guidance of the industry.

The tentative questionnaire published in this issue of The Oil and Gas Journal is submitted to the industry for suggestions and amendments before the final form is determined.

As framed it covers location and type of stations, gasoline sales, lubricant and grease sales, marketing policy and miscellaneous information of value to the business.

The Government proposes to make more than a superficial investigation and if the plan is carried out as proposed the oil companies will have complete information relating to marketing conditions in a certain area which should be of invaluable service to the industry. By this means a company contemplating expansion can ascertain whether a certain territory already has as many or more stations than can be profitably operated and the addition of further competition can be avoided.

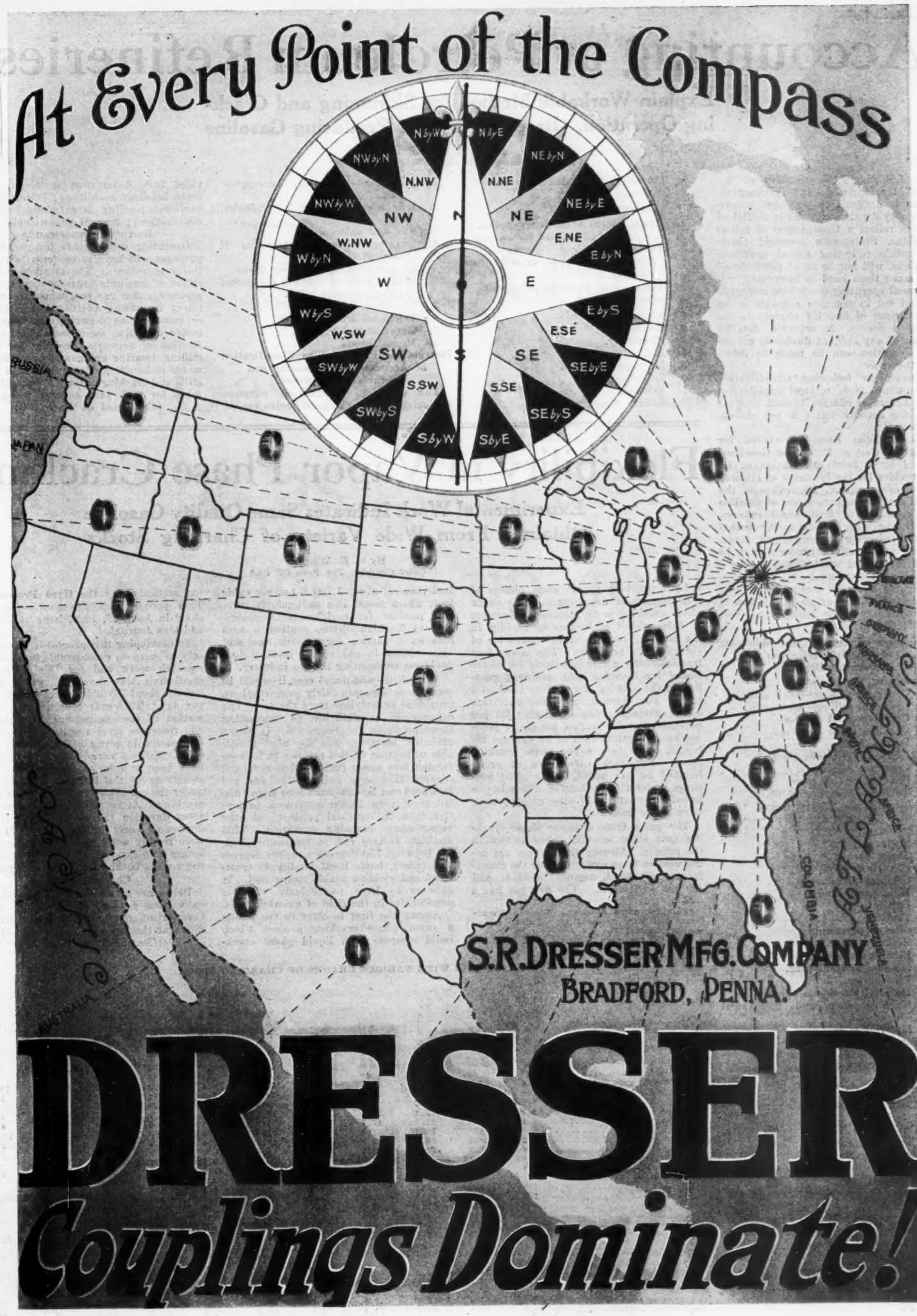
Such a report should serve as a basis for sound operations. The oil business has long been seriously in need of just such information which, if heeded, would have averted heavy losses from unnecessary expansion where there was no possible hope of profitable competition.

It may have the further benefit of promoting a certain amount of co-operation in the marketing division on matters of mutual interest which in the end may demonstrate convincingly the folly of offsetting competitors at locations where the only effect can be the splitting of the strictly limited volume of business into fractions that will not pay the expenses of any.

It might even be possible to show the superiority of a system whereby, in suburban districts especially, companies would respect each other's locations and by better planning in relation to volume of prospective business afford each a paying location and at the same time better accommodate the motoring public which does not need the purely competitive grouping now so general.

Such a questionnaire as the Department of Commerce proposes, submitted for suggestions from the industry, and then carried out with the proper spirit of co-operation on the part of the individual units in the business, would give the industry for the first time definite and official data on the basic facts of the distribution of gasoline and other petroleum products used by motorists.

The Oil and Gas Journal appreciates the honor of being selected by the Government as the channel for submitting the tentative questionnaire to the attention of the industry and believes it a real service, more particularly just at this time when the inauguration of the code of marketing ethics is centering attention upon the distributing end of the oil business and the need for this information is being acutely felt.


At Every Point of the Compass
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NE by E
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RUSSIA
JAPAN
AUSTRALIA
COLOMBIA
VENEZUELA
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BRADFORD, PENNA.
DRESSER
Couplings Dominate!

Accounting at Petroleum Refineries

Explain Workable Method for Skimming and Cracking Operation. Based on Cost of Producing Gasoline

By C. E. Votrian
Assistant Treasurer, Barnsdall Refineries, Inc.*

The following "Classification of Accounts" for skimming and cracking refineries is designed to segregate operating costs by departments and in sufficient detail to reflect a true picture of actual operations. Statements prepared therefrom, while reflecting actual operating conditions, will not be in so much detail as to make them hard to interpret.

Unusual operating conditions are made to stand out in separate accounts or by a comparison of monthly charges to the various accounts. A separate detailed analysis of any account disclosing an unusual condition can be made to determine the cause.

"Instructions" following "Classification of Accounts" gives a brief explanation of the nature of charges to each account where the account name is not self-explanatory.

The "Skeleton Form" presented for computing "Cost of Producing Gasoline" followed by a brief explanation of its use, provides for the inclusion of refinery costs of every nature. Regardless of the method used in computing cost of gasoline it is essential to include all refinery costs if anything approximating actual cost of production is ascertained. Gasoline and other refined products may be offered for sale at what appears to be a reasonable profit based on incomplete cost figures when in reality the selling price includes little or no profit and in some instances will be below actual cost of production.

Classification of Accounts for Skimming and Cracking Refineries
Department Divisions

10—Operating Departments:
- 11. Crude oil stilling—shell stills.
- 12. Crude oil stilling—pipe stills.
- 13. Cracking plant stilling.
- 14. Gasoline vapor treating.
- 15. Re-run stilling.
- 16. Light oil agitators (batch).
- 17. Continuous treaters.
- 18. Gas plant—still gases.
- 19. Tank yard—skimming plant.
- 20. Tank yard—cracking plant.

30—Utility Departments (For re-distribution):
- 31. Water supply.
- 32. Steam plant.
- 33. Electric supply.
- 34. Compressed air.
- 35. Main pump house.
- 36. Laboratory.
- 37. Trucks.

40—General Departments:
- 41. Refinery office.
- 42. Plant general.
- 43. Loading and shipping.
- 44. Fire protection.
- 45. Material warehouse overhead.
- 46. Machine shop and mechanical overhead.
- 47. Material reclamation.

Classification of Accounts for Skimming and Cracking Refineries
Department Subdivisions and Accounts

(A) Labor:
- 1. Operating labor.
- 2. Cleaning expense (labor and material).
- 3. Unclassified labor.
- 4. Clerical expense.

(B) Supervision:
- 1. Direct supervision (salary and expense).
- 2. Indirect supervision (salary and expense).

(C) Repairs and Maintenance:
- 1. Ordinary repairs and maintenance (labor and material).
- 2. Unusual repairs and replacements (labor and material).
- 3. Changing equipment and dismantling.

(D) Material Supplies:
- 1. Miscellaneous operating supplies.
- 2. Stationery and printed forms.
- 3. Fuel.
- 4. Chemicals (separate account for each).
- 9. Tools (other accounts as needed).

(E) Utility Distribution:
- 1. Water.
- 2. Steam.
- 3. Electricity.
- 4. Air.
- 5. Main pump house.
- 6. Laboratory.
- 7. Trucking.

(F) Sundry Charges:
- 1. Insurance—workmen's compensation.
- 2. Insurance—fire, tornado, explosion, etc.
- 3. Tax—ad valorem.
- 4. Royalties (separate accounts if needed).
- 5. Depreciation of equipment in use.
- 6. Depreciation of obsolete equipment (plant general only).
- 7. Traveling.
- 8. Telephone and telegraph.
- 9. Experimental expense.
- 10. Miscellaneous.

Instructions Pertaining to Classification of Accounts for Skimming and Cracking Refineries

For account classification purposes skimming and cracking refineries are divided into department divisions under three headings as follows: Operating departments; utility departments; (for redistribution); general departments.

Operating Departments

Operating departments for accounting purposes will have to conform to the refinery operations. The attached classification of accounts suggests operating departments that can be adapted to any refinery by adding additional departments or consolidating departments. The suggested operating departments, per classification of accounts, provides for rerun stilling, treating and gas recovery departments to handle products from both crude stills and cracking stills. A separation is made for tank yard expense which may

(Continued on Page 139)

*Manufacturers meeting, Western Petroleum Refiners Association, Tulsa, Okla., October 28 and 29.

Flexibility in Vapor Phase Cracking

Experimental Work Indicates Same Quality Gasoline Obtained From Wide Variety of Charging Stocks

By C. R. Wagner
Chief Chemist, The Pure Oil Co.*

In a previous paper[1] some phases of the commercial development of vapor phase cracking were discussed. Interest in this subject is increasing rapidly in the industry because of the character of the products produced. The motor fuel fractions offer a fair substitute for motor benzol for blending with ordinary gasoline in the making of premium antiknock fuels. For example, a refiner operating on an average crude containing 30 per cent gasoline can market his entire product as a premium fuel, if he charges his topped crude to a vapor phase cracking plant. For each 1,000 bbls. of crude handled he has added to his plant revenues at least $504, half of which is collected on what would otherwise be ordinary motor gasoline.

The gases from a vapor phase cracking unit offer unusual opportunities to the refiner. Already these gases are being used in large quantities for the manufacture of glycol, acetone, alcohols and for gas enrichment. The dry gas has a fuel value of about 1,700 B.t.u. per cubic foot, which makes it a particularly valuable product for enrichment purposes. Due to its high olefine content it acts also as a carrier for naphthalene and thus assists in one of the most serious problems confronting the gas industry.

With little additional cost it would be possible to separate fairly pure ethylene, propylene or butylene from the gas. The commercial possibilities in marketing these products are enormous. It seems probable, however, that the most profitable utilization of this gas lies in its conversion into motor fuel. It has been discovered that over half of the dry gas produced can be converted into motor distillate of even higher antiknock properties than the original product of the vapor phase cracking operation. This distillate is very rich in compounds boiling between 150 degrees and 300 degrees Fahrenheit, lends itself readily to treatment and yields a stable motor fuel. It appears to have particularly valuable possibilities in the field of aviation fuels.

Among the first to offer to the public a vapor phase cracking process which could compete with liquid phase cracking methods was the Gyro Process Co. This process was described with flow chart in April 25, 1929, issue of The Oil and Gas Journal.

In developing this process it was necessary to carry on considerable fundamental research work and for this purpose a small unit was developed which would handle about 10 bbls. of charging stock per day. This unit consists of a cross-section of the commercial installations and therefore gives results which can be interpreted in terms of large scale operation. Quite a variety of charging stocks have been run in an endeavor to learn something of the behavior of these oils under the conditions found in vapor phase cracking. Although these runs were of short duration (24 to 48 hours) it was discovered early in the work that they were readily duplicated and that runs of longer duration added little of value to the results obtained in the short runs.

Charging Stock

Below are given results of several runs on various grades of charging stock. Comparison may also be made between different throughputs and lengths of con-

(Continued on Page 140)

*Manufacturers meeting, Western Petroleum Refiners Association, Tulsa, Okla., October 28 and 29.

[1]The Oil and Gas Journal, April 25, 1929.

RESULTS WITH VARIOUS GRADES OF CHARGING STOCK

Charging stock	Cabin Creek gas oil	Cabin Creek gas oil	Recycle from cross stills	Seminole gas oil	Winkler gas oil	Topped Sweet Lake crude	Liquid phase recycle from Winkler gas oil	Mexican gas oil	Ranger gas oil	Heavy Venezuela crude oil	Topped Seminole Crude
Length conv. tube (ft.)	40	60	40	40	40	40	40	40	40	40	60
Throughput, gals./hr.	61.4	93.5	58.5	60.5	59.2	63.6	59.4	61.2	60.7	79.8	102.4
Temp. exit converter, °F.	1100	1068	1112	1099	1108	1100	1128	1114	1112	1075	1067
Gallons charged	476	585	362	254	392	302	467	735	1225	582	629
Per cent distillate	64.0	63.8	53.9	57.5	56.2	49.2	59.5	56.7	54.0	42.8	47.1
Per cent fuel	6.3	6.0	21.0	17.7	18.3	27.8	16.4	11.0	14.0	42.1	33.9
Cu. ft. dry gas	13,050	13,900	7760	5710	10,300	7280	9250	20,300	29,120	6700	10,900
Per cent dry gas	34.2	29.7	26.8	27.9	29.1	30.1	25.4	34.7	29.7	14.4	21.7
Cu. ft. gas/gal. dist.	42.8	37.2	39.8	39.1	41.5	49.0	34.0	48.8	44.0	35.1	36.8
Recirculation ratio	3.09	3.32	3.88	5.71	3.64	5.19	3.12	4.11	3.57	3.30	4.59
Grav. of dist.	54.8	54.9	48.1	50.1	46.5	49.9	45.9	57.5	53.6	52.6	51.3
Initial	97	100	104	102	100	99	95	82	94	101	112
10%	168	152	174	173	174	149	164	135	140	162	168
20%	201	191	216	206	210	188	220	184	172	194	204
50%	288	294	319	303	308	290	336	250	276	284	300
90%	389	410	407	395	400	416	397	363	397	382	398
Endpoint	424	435	441	422	431	438	417	396	426	414	426
Iodine No.	206.2	209.8	190.7	205.8	218.2	217.5	168.6	251.4	230.7	162.0	170.0
Ref. Index (N_D^{20})	1.4328	1.4327	1.4480	1.4438	1.4448	1.4441	1.4521	1.4289	1.4362	1.4246	1.4405
Grav. of fuel	13.6	11.1	10.2	9.4	7.1	12.1	7.5	13.6	7.4	3.0	11.9
Sp. Gr. of gas	1.089	..	1.012	1.020	1.080	0.985	..	0.986	0.996	1.0	..
Additional dist. available by treating gas	16.5	14.3	12.8	13.5	15.8	14.5	12.1	16.6	14.3	6.5	10.4
Total dist. available	80.5	78.1	66.7	71.0	72.0	63.7	71.6	73.3	68.3	49.7	57.5

Dubbs Cracked Gasoline is every bit as good as it is cracked up to be

Universal Oil Products Co
Chicago, Illinois

Dubbs Cracking Process
Owner and Licensor

UMPIRE SATISFIED WITH PROGRESS OF PRORATION IN OKLAHOMA POOLS

The potential production of prorated fields in Oklahoma last week averaged 448,645 bbls. The allowed production was 343,996 bbls. and Umpire Ray M. Collins' estimate of the actual production was 353.332 bbls.

None of the fields produced under its allowed output, although the Wilcox sand wells in the Allen Pool were slightly under the allowed figure.

Mr. Collins expressed himself as satisfied with the progress made thus early in the proration period, which extends from October 16 to January 1. The Oklahoma City Field will join the prorated fields on November 2. Thereafter Oklahoma City and East Earlsboro will be prorated 40 per cent of their potential until November 30, and 50 per cent during December. The other prorated fields will be cut down 20 per cent of their potential in November, and 25 per cent in December.

The following table gives the potential, allowed and Mr. Collins' estimate of the actual production in the various pools for the week ending Saturday, October 26:

PRODUCTION OF PRORATED FIELDS
Daily Average for Week Ending Saturday, October 26

Pool—	Potential (bbls.)	Allowed (bbls.)	Estimated actual (bbls.)
Allen (Wilcox sand not included) ..	23,720	18,976	19,000
Bowlegs	31,877	25,502	26,000
Carr City	11,141	8,913	9,000
Earlsboro	48,411	38,729	40,000
Little River	56,082	44,866	46,000
Maud	11,851	9,481	9,800
Mission	23,541	18,833	19,000
Pearson	1,113	890	1,000
Seminole City	32,514	26,011	26,500
East Seminole	8,144	6,515	6,700
Searight	12,599	10,079	10,500
St. Louis	66,944	53,555	56,000
East Little River.	26,904	21,524	22,060
Sasakwa	11,785	9,429	9,947
Allen, Wilcox sand	5,700	4,562	4,542
Marshall	19,078	15,265	16,102
East Earlsboro ...	50,625	25,575	25,709
Asher	6,616	5,291	5,472
Total	448,645	343,996	353,332

Many problems affecting individual leases and whole pools have come up since the State Corporation Commission's order to prorate the above fields was put into execution. It has been found difficult to make the conditions imposed upon the Wilcox sand wells in the Seminole area fit the Hunton lime and Misener sand wells in the Mission and Maud district in the same general area. There was trouble in the Allen Field and again in Sasakwa, but all the difficulties were discussed and straightened out, or are in the process of being satisfactorily solved, and Umpire Collins expects to go into October with a better understanding between his organizations and the producers affected.

The Sasakwa Pool was opened wide this week to obtain a new potential, the umpire not being satisfied with the potential figure placed upon that pool. Next week's proration figures will be 20 per cent of this week's total on that pool.

On Page 141 of this edition will be found a map giving a graphic description of the manner of prorating the Oklahoma City Pool in November and December.

Drilling Rules in Field

The schedule of shut-down time required on drilling wells in the East Earlsboro Pool, in Seminole County, Oklahoma, is based on a 50 per cent shutdown from October 1 to 31; 40 per cent shutdown from November 1 to 30, and 50 per cent shutdown from December 1 to 31, is as follows: All wells shut down on top of the sand on any day between October 16 and November 3, inclusive, may start drilling 27 days later and be allowed full production until December 1. All wells shut down on top of the sand on any day between November 4 and November 20 may start drilling 41 days later and be allowed full production to January 1. Wells that shut down on top of the sand on any late from November 21 to December 31 shall wait 41 days before drilling in and will then take the proration on the percentage to be determined.

The schedule for drilling wells in Seminole City, Bowlegs, Little River, East Little River, Sasakwa, Asher, Allen, St. Louis, Pearson and Logan County, showing the shut-down time required, based on a 20 per cent shutdown October 16 to November 30, and a 25 per cent shutdown December 1 to 31, is as follows: All wells shut down on top of the sand

(Continued on Page 142)

High Spots in Field News

CALIFORNIA

Much new work at Santa Fe Springs.

SOUTHWEST TEXAS

Magnolia company makes several locations in Darst Creek area, but shutdown may be arranged in that district.

GULF COAST

A 3,500-bbl. well brought in at Big Creek by Gulf Production Co.
Raccoon Bend extended 1,800 feet east. Refugio shows gain.

KANSAS

Voshell Pool extended 2 miles north. It is thought pool in McPherson County is on big structure and may develop large production.

NORTH TEXAS AND PANHANDLE

Two extensions in Wichita County.
In the Panhandle there were two good wells in Gray County, a small extension in Carson County and another decrease in Gray County output.

ROCKY MOUNTAIN AREA

Land Commissioner opposes curtailment in New Mexico, but favors orderly development.
Big gas encountered in Hobbs area, Lea County.

WEST TEXAS

Semiwildcat producer in Fisher County, 1½-mile extension to the Sinclair-Steele Pool.
Another deep test to be drilled below 8,000 feet in McElroy Pool, Crane County. Discouraging developments northeast and northwest of Rowan & Tong Pool in Pecos County.

OKLAHOMA

Production of Oklahoma City Pool October 29 was 82,406 bbls.
Slick Oil Co.'s No. 1 Glidden, 24-hour gauge, 16,156 bbls.
Second well north of C ment, Caddo County, making 800 bbls. by heads.
District Court of Appeals postpones hearing on gas conservation law case until November 12.

NORTH LOUISIANA-ARKANSAS

Wildcat in Trinity formation, Caddo Parish, 8 miles from production, cored saturated sand.
Dixie Pool production extended three-quarters mile east.
New third gas sand indicated in West Carroll Parish.
Good gas well in Pope County.

Late News From the Fields

MICHIGAN

MUSKEGON, Mich., Oct. 29.—Three Michigan oil fields decreased 330 bbls. in average daily production for the week ending October 28 at 7 a.m. The average was 17,510 bbls. The total Muskegon production was: Dundee, 9,100 bbls. and Traverse 660 bbls., a total of 9,760 bbls. daily. At Mount Pleasant, Dundee production was 7,500 bbls., Traverse 100 bbls. Saginaw produced 250 bbls. of Traverse crude daily.

KANSAS

Dixie Oil Co.'s No. 1 Olsen, NW cor. NE, Section 10-16-3w, Saline County, has a good show of oil and gas at 3,306 feet. The 6-inch casing was landed at 3,235 feet. Water has broken in and casing is being underreamed to effect a shutoff. This wildcat is 10 miles from the nearest production.

Shell Petroleum Corp.'s No. 1 Erdwein, SW cor., Section 11-26-2, Sedgwick County, had chat at 2,849-60 feet. It made 955 bbls. in the first 14 hours, swabbing on an average 65 bbls. an hour. The well extends the producing area a half mile north. It had the pay horizon 50 feet higher than the discovery well and proves considerable acreage.

Slick, Pryor & Lockhart's No. 1 Grattan, NW cor. NE NW, Section 34-20-3w, McPherson County, has been pinched to 50 bbls. daily. The well extended the producing area in the Voshell Pool 2 miles north. It had been making 255 bbls. daily from chat at 3,095-3,108 feet.

OKLAHOMA

The new potentials gauge for the East Earlsboro Pool were taken Saturday, October 26, for the week ending November 2. It totaled 44,676 bbls. These estimated figures show the potential has declined about 4,000 bbls. from the previous week. The gauges by companies and leases were as follows:

Company, farm—	Wells	Bbls.
Amerada, Sullivan	2	3,650
Barnsdall, Noble	2	588
Barnsdall, Gillam	1	199
Burke-Gries, Fixico	1	2,290
Carter, Wrightsman	1	4,605
Gypsy, Noble	2	3,042
Gypsy, Payne	6	8,330
Magnolia, A. Anderson	8	6,379
Magnolia, D. W. Anderson ...	3	3,160
Magnolia, Moore	2	951
Minnehoma, Noe	1	2,790
Prairie, Baker	5	1,135
Prairie, Calkins	2	3,415
Prairie, Raitman	3	3,085
Prairie, Wisener	1	505
Sinclair, Miller	1	642
Total	41	44,676

The production of the East Earlsboro Pool on October 29 was 18,272 bbls. from 43 wells.

The second well to find production in the new area north of Cement in Caddo County was Magnolia Petroleum Co.'s No. 2 Caddo Lowe, SE NE SW NE, Section 36-6-10w. It had sand at 3,268-80 feet, and was estimated to be making 800 bbls. daily flowing by heads. The discovery well, a location east, made 120 bbls. daily in the same sand.

Prairie Oil & Gas Co. and others' No. 1 Sudick, C NE NE, Section 8-10-2w, Cleveland County, was drilling at 7,385 feet, on October 29. It is the deepest drilling test in the State at the present time.

Independent Oil & Gas Co.'s No. 1 Salooka, in Section 9-7-7, Seminole County, had Wilcox sand at 4,372-4,432 feet, with water. It had the second Wilcox sand at 4,507-22 feet, where a hole full of water was encountered. It will be abandoned at the present depth. This test cuts off production to southeast in the Little River Pool.

Production at the Oklahoma City Pool on October 29 was 82,406 bbls.

The first 24-hour gauge on the Tom Slick Oil Co.'s No. 1 Glidden was 17,276 bbls. It is located in SW cor. SE Section 13-11-3w.

The Prairie Oil & Gas Co. and others' No. 2 Hiddleston, SE cor. Section 19-11-2w, was swabbing and showing oil at a total depth of 6,685 feet. It is the most easterly test in the main south pool and is expected to be the next producer completed in the pool.

The Shell Petroleum Corp.'s No. 2 Petty, SW cor. NE, Section 30-11-2w, was drilling at 6,727 feet, on October 29.

Sasakwa Pool gauged 11,317 bbls. from 18 wells on October 29. The gauges by companies and leases were as follows:

Company, farm	Wells	Bbls.
Sinclair, Davis	6	4,206
Signal, Bond	3	1,682
Pure, Bates	2	3,335
Shell, Holutka	2	2,602
I. T. I. O., Holutka	2	526
Prairie, Diament	1	910
Prairie, Patton	1	....
Magnolia, Spillman	1	400
Total	18	11,317

The production of the East Little River Pool on October 29, was 20,984 bbls. from 33 wells. The gauges by companies and leases were as follows:

Company, farm	Wells	Bbls.
Cont.-Shaffer, Harrison	3	1,128
Gypsy, Payne	6	2,815
Gypsy, Walker	1	770
Mid-Continen., Smith	12	5,480
Prairie, Lusty	1	20
Prairie, B. Smith	1	1,140
Prairie, Carr	1	30
Prairie, Thomas	2	555
Sinclair, Phillips	6	8,305
Texas, Chilcoat	1	761
Total	33	20,984

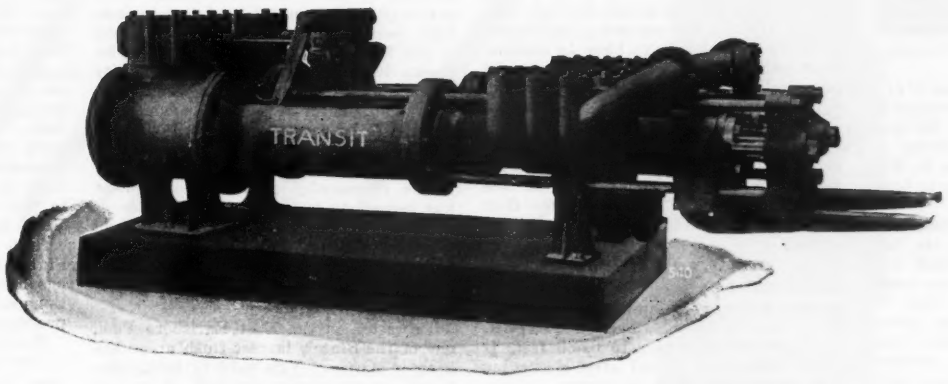
A.P.I. WEEKLY REFINERY STATISTICS

The weekly report made to the American Petroleum Institute on refinery statistics—crude runs to stills, gasoline stocks and gas and fuel oil stocks—for the week ending October 26 follows:

	(1)	(2)	(3)	(4)
East Coast	100.0	3,471,100	4,130,000	9,182,000
Appalachian	88.1	675,600	759,000	760,000
Indiana, Illinois, Kentucky	98.4	2,136,100	4,090,000	3,802,000
Oklahoma, Kansas, Missouri	81.6	2,030,900	2,224,000	4,113,000
Texas	91.6	4,246,100	4,934,000	14,160,000
Louisiana and Arkansas	97.1	1,336,200	1,680,000	4,983,000
Rocky Mountain	93.2	468,400	1,629,000	944,000
California	98.7	5,129,000	13,356,000	110,011,000
Total United States	95.4	19,493,400	32,802,000	147,955,000
Texas Gulf Coast	100.0	3,281,300	4,193,000	10,793,000
Louisiana Gulf Coast	100.0	901,200	1,399,000	4,228,000

(1) Per cent refinery capacity represented. (2) Crude runs to stills. (3) Gasoline stocks. (4) Gas and fuel oil stocks.

FRICK-REID TRANSIT



TRANSIT 18"x5"x18" Horizontal Duplex End Packed Plunger Pump for 500 to 1000 lbs. working pressure. Especially adapted where more or less grit is contained in the fluid to be pumped, as there are no pistons nor rings for the grit to cut.

TRANSIT PUMPS are built and used extensively in the heart of the Pennsylvania oil fields where producers have to make a profit from wells averaging less than one-fifth of a barrel in twenty-four hours. This means refinements and the utmost economy in every operation.

In the larger oil fields, where they operate against maximum capacity all day, TRANSIT PUMPS always show up to the best advantage —low first cost, low steam consumption, and no repairs to speak of.

Whether you are a refiner, pipeliner or producer, we suggest you ask The Frick-Reid Supply Corp. about THE TRANSIT PUMP for your purpose. Courtesy, action, knowledge, and a stock of these pumps are found in all their stores.

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Oklahoma Operations Slowed Down

Curtailment Movement Affects New Drilling Operations as Well as Production, Which Fell Off in Past Week

By W. A. Spinney
Staff Correspondent, Oklahoma Fields

Production of Oklahoma for the week ending October 26 was estimated to average 680,000 bbls. This figure amounts to a 28,000-bbl. decline from the previous week's daily average. The decline was caused by the operation of proration plans in the Seminole and Logan County Fields.

The Oklahoma City Pool will be curtailed 40 per cent at 7 a.m. November 2. All producers in Class "A" will be allowed to flow wide open until November 6. The Class "B" producers will be shut in from November 2 to November 6.

The production in the Oklahoma City Pool has been declining during the last week. The low mark for the week was reached Sunday morning at 7 a.m. when the pool gauged 67,652 bbls. from 19 wells. The production on Monday morning at 7 o'clock was 12,511 bbls. from four wells. The field was shut in Sunday mostly for the pipe lines to balance their runs. Production is expected to show a big increase when the Tom Slick Oil Co.'s No. 1 Glidden, SW cor. SE, Section 13-11-3w, will be back on production beginning October 28. The test was opened at 4 a.m. Monday and made 2,670 bbls. by 7 a.m. The producer ranked as one of the largest completed in the field when it blew in. It made as high as 950 bbls. an hour and 17,168 bbls. the first 24 hours.

Oklahoma City Area

Tests on the east side of the Oklahoma City Pool are deep enough for early completion. Development has been rapid in that part of the pool. The Prairie Oil & Gas Co. and Shell Petroleum Corp. each owns a quarter section and each has several deep tests ready for the final bailing. Prairie Oil & Gas Co. and others' No. 2 Hiddleston, SE cor., Section 19-11-2w, on the extreme east edge of the field, was drilling the cement plugs Saturday, October 26, with a trace of oil at a total depth of 6,650 feet, corrected depth. The hole was loaded with water and a few feet more of hole is to be drilled before a production test is made. Same company's No. 3 Hiddleston, SW cor. NW SE, Section 19-11-2w, has reached a total depth of 6,503 feet with several good showings of oil and gas. It will be bailed down in the next few days and a production test made. Same company's Nos. 4 and 5 Hiddleston, in Section 19-11-2w, are drilling below 5,000 feet.

Shell Petroleum Corp.'s No. 2 Petty, SW cor. NE, Section 30-11-2w, is drilling at 6,715 feet, and is the deepest test in the main part of the pool. It has encouraged the owners by rainbow shows of oil. Same company's No. 3 Petty, NE cor., Section 30-11-2w, was landing 6-inch casing at 6,325 feet. Same company's Nos. 4 and 5 are drilling below 5,000 feet, while Nos. 6 and 7 are below 4,000 feet, all making good drilling time.

Wells Near Completion

Mid-Kansas Oil & Gas Co. has two wells which may be on production soon. No. 1 Browning, SW cor. NW, Section 18-11-2w, was waiting for cement to set at a total depth of 6,548 feet. Attention is directed to this test on account of its location, the most northeasterly test in the field. Same company's No. 4 Fortson, NE cor. NW NE, Section 24-11-3w, was getting showings of oil while rotating at 6,415 feet. Same company's No. 5 Fortson, SE cor. SW NE, Section 24-11-3w, was rotating ahead at 6,125 feet in shale. Same company's No. 1 Mollman, SE cor., Section 23-11-3w, was rotating in shale at 5,950 feet. Coline Oil Co.'s No. 3 Olds, NW cor., Section 24-11-3w, is expected to be on production in a few days. The total depth is 6,437 feet, in an oil sand. Casing was cemented 10 days ago. Same company's No. 2 Olds, C NE NW, Section 24-11-3w, is about ready to resume drilling operations, after having trouble with gas blow-outs for the past month. The test has reached a total depth of 6,342 feet, where it blew in making 50,000,000 feet of gas and running wild for several weeks. Same company is drilling Nos. 4, 5, 6 and 7 on the same lease.

Sinclair Oil & Gas Co.'s No. 3 Stamper, SE cor. NW, Section 30-11-2w, was completed last week. It blew in making what was estimated 100,000,000 feet of gas and it tanked 3,215 bbls. of oil the first 24 hours. It is shut in for the 30-day period.

Discovery Well Deepened

The discovery well in the field, the Indian Territory Illuminating Oil Co.'s No. 1 fee, C SE SE, Section 24-11-3w, has been drilled deeper to 6,588 feet. It made 2,959 bbls. of oil after deepening and about 5,000 bbls. of water.

Proration in Greater Seminole

Proration was applied to all flush areas in the State on October 16, with the exception of the East Earlsboro Pool, which was already being prorated 50 per cent of its potential, and the Oklahoma City Pool. The proration plans also curtail the drilling operations in the various areas. Some express an opinion that the future drilling operations will be affected by these proration plans. This can only be determined by future events. This week's announcements of locations in the Seminole area were noticeable by their decreasing number. Community drilling agreements, whereby each company contributes a certain amount of acreage to be developed by one company, is becoming more popular and in time may displace dry hole contributions.

The community plan of development has helped to cut down the number of drilling operations in all wildcat and some semiwildcat areas and in time will allow the companies to produce the maximum amount of oil at a better price per barrel.

Proration in the East Earlsboro Pool, one of the State's largest flush areas has been a success. This pool is being curtailed approximately one-half of its potential production. Previous to the proration plans, some operators were in doubt as to the earnest enforcement of these plans. With these operators, doubt still remains, and it can only be dispelled by continued co-operation on the part of all those concerned.

The St. Louis Pool is probably declining faster than any of the other pools in the Greater Seminole region. The average daily production was 54,590 bbls., from 430 wells, for the week ending October 24. The decrease amounts to 2,691 bbls. daily, with an increase of four wells.

The Asher Pool is next in line showing the largest percentage of loss in the daily average amount produced in the Seminole area. The pool averaged 5,890 bbls. last week from 21 producing wells. The loss amounted to 1,296 bbls. daily for the week ending October 24. The production in this pool is mostly coming from the Viola lime, which has proved very uncertain in several other parts of the State in the past. The producing area has been apparently defined in all directions and the future possibilities from a production standpoint are limited.

Greater Seminole area produced about 17,000 bbls. a day less in the past week than it did the previous week. It has been prorated only a week, starting last October 16.

Two Pools Show Increase

Only two pools in the Greater Seminole area show increases over last week's production. The East Earlsboro Pool shows an increase of about 1,000 bbls. daily, it is mostly due to including the production in Section 24-9-5, which gives the pool a total of 41 wells. The only well completed in the area last week was the Magnolia Petroleum Co.'s No. 3 D. W. Anderson, SE cor. NW SE Section 18-9-6, Seminole County. It had Wilcox sand at 4,308-24 feet, where it swabbed 856 bbls. on the gauge of October 24. The pool has seven wells shut down in the Wilcox sand on account of the proration plan. All these tests have oil in the hole. The Maud Pool, in the Misener sand area, shows an increase of around 400 bbls. daily over last week's gauge. Part of the increase is due to the Gypsy Oil Co.'s No. 3 Gossland, which was making less than 300 bbls. daily through the tubing before the shot. After shooting with 10 quarts in the Misener sand it flowed 622 bbls. in 24 hours. In the northwest extension to the Maud Pool the shooting of wells has been successful. Empire Oil & Refining Co.'s No. 3 Smith, Section 8-8-5, had Misener sand at 4,008-33 feet, but drilled to the Hunton at a total depth of 4,050 feet. It made 605 bbls. after a 40-quart shot.

The Little River Pool completed only one Wilcox sand well last week. The production shows a decline of approximately 4,500 bbls., partly due to the proration plan. The new well is the Gypsy Oil Co.'s No. 1 Willie, SW cor. NW NE Section 24-7-6. It had Wilcox sand at 4,126-36 feet, where it made 810 bbls. after a 30-quart shot. In the same section Carter Oil Co.'s No. 3 J. Walker, SE cor. NE NW, had Wilcox sand at 4,140-49 feet. It swabbed 120 bbls. in 12 hours on October 23. The only shallow well completed in the pool was the Blackwell Oil & Gas Co.'s No. 1 Baker, SW cor. NW SE Section 11-7-6, which has been shut in as a 15,000,000-foot gas well at a depth of 3,152-57 feet. Same company's No. 1 Thomas, NW cor. NE SE Section 11-7-6, had been shut down for several weeks while the company was getting ready to plug in. The well started flowing 50 bbls. daily last week from the Cromwell sand. It later declined to 20 bbls. and is expected to go dead in a few days.

The East Little River Pool declined

(Continued on Page 71)

WILDCAT OPERATIONS IN OKLAHOMA

(Descriptions are East and North unless marked otherwise)

NORTHERN OKLAHOMA
ALFALFA COUNTY

Company, farm and location—	Remarks:
Smith Bros.' No. 1 Forbes, SE cor. NW NW Sec. 12-27-11w	Shut down 1,232 ft.
J. W. Bailey's No. 1 Acre, SW cor. NE Sec. 14-24-11w	Shut down 3,320 ft.

BECKHAM COUNTY

Kay and others' No. 1 Martin, C E half E half NW Sec. 32-8-24w	Drlg. 1,835-1,900 ft.; 2,000,000 ft gas.
Producers Exploration Co.'s No. 1 Seidell, SE cor. SW SW Sec. 17-9-22w	Shut down 2,402 ft.
Carson and others' No. 1 Danby, SW cor. SE NE Sec. 20-8-22w	Shut down 1,547 ft.

BLAINE COUNTY

Lowen and others' No. 1 Unknown, NW cor. SW NW Sec. 27-16-11w	Spudded and shut down.
Washoma Oil Co. and others' No. 1 Phillips, C NW SW Sec. 12-19-10w	Shut down 2,880 ft.

CADDO COUNTY

Abernathy & Brown's No. 1 Horton, SE cor. Sec. 8-6-13w	Shut down 535 ft.
W. J. Hartley's No. 1 Galbreath, SE cor. NW SE Sec. 29-5-12w	Shut down 3,394 ft.

CLEVELAND COUNTY

Harris et al's No. 1 Highbee, SE NW Sec. 20-6-1	Rig.
Daniels & LeWright's No. 1 Vandever, C SW Sec. 15-7-1w	Shut down 3,130 ft.
Phillips Pet. and T. B. Slick's No. 1 Sudick, NE cor. NE Sec. 8-10-2w	Drlg. 7,310 ft.

COAL COUNTY

W. E. McGraw's No. 1 King, C SW NE Sec. 11-1-8e	Shut down 1,285 ft.
McGinley & Sigler's No. 1 Willsey, NW cor. SE SE Sec. 7-2-8	Shut down 3,016 ft.
E. W. Whitney's No. 1 Brown, C SE NE Sec. 10-2-8	Shut down 202 ft.

COMANCHE COUNTY

Green and others' No. 1 Wilson, C NE SW Sec. 14-1-12w	Shut down 4,055 ft.

CREEK COUNTY

Carter Oil Co. et al's No. 1 Clinton, SW NW Sec. 12-15-9	Spudding.

GARFIELD COUNTY

Continental and Barnsdall's No. 1 Brown, CNL SW Sec. 10-20-4w	Location.
E. L. Love and others' No. 1 White, SE cor. NW Sec. 9-24-6w	Underreaming 5-in. csg. 5,566 ft.

GRADY COUNTY

J. V. Bailey's No. 1 Hubbard, C NE NW Sec. 1-10-6w	Spudded and shut down.
J. M. Henry and others' No. 1 Abraham, SE cor. NW Sec. 4-5-8w	Rig.

GRANT COUNTY

Gypsy Oil Co.'s No. 1 Belderbeck, C SE SE Sec. 27-28-7w	Drlg. 2,350 ft.
Bailey's No. 1 Stover, C SW SE Sec. 20-27-5w	Rig on ground.
Baucher et al's No. 1 Deadman, SW SE Sec. 13-28-4w	Drlg. 3,525 ft.
Cowden and others' No. 2 Vollmer, CEL NE SW Sec. 22-25-4w	Shut down 5,640 ft.
Otstot's No. 1 Tabor, C NE NE SE Sec. 23-26-3w	Rig.

GREER COUNTY

Helmerick & Payne's No. 1 Henck, NW cor. Sec. 23-6-24w	Fishing 1,650 ft.
I. T. I. O. and others' No. 1 fee, C SW NE Sec. 17-6-24w	Fishing csg. 1,902 ft.
S. M. Stauffer's No. 1 Castleman, SW NE Sec. 4-4-26w	Shut down 625 ft.

HARPER COUNTY

Sinclair Oil & Gas Co.'s No. 1 Howell, C SW SW Sec. 14-26-24w	Drlg. 5,324 ft.

HASKELL COUNTY

Holden's No. 1 Phillip, SE cor. Sec. 3-9-18e	Shut down 1,200 ft.
Marion Oil's No. 1 Sanders, NW NE SW Sec. 10-9-18e	Shut down 2,387 ft.
Sanboise Gas' No. 1 Unknown, SW NW SE Sec. 32-9-21e	Shut down 2,100 ft.

HUGHES COUNTY

Wright et al's No. 1 Ott, SE SW Sec. 15-5-11	Rig.
Canady et al's No. 1 Kanard, NW SW Sec. 29-9-12	Shut down 1,200 ft.
Irwin et al's No. 1 Jones, SE NW Sec. 30-5-10	Rig on ground.
McCullough Oil Co.'s No. 1 Scott, NW NE Sec 23-6-8	Drlg. 3,350 ft.

(Continued on Page 162)

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Voshell Pool Extended Two Miles

Test Gives Rise to Opinion That Pool in McPherson County Is on Big Structure and May Develop Large Production

By W. A. Spinney
Staff Correspondent, Kansas Fields

A wildcat in McPherson County found oil and extended the Voshell Pool in that county 2 miles north. The new well is Tom Slick, Inc., and Pryor & Lockhart's No. 1 Grattan, C NE NW NW, Section 34-20-3w. It is producing at the rate of 15 bbls. an hour from the chat at 3,055-3,108 feet. The well is also making about 3,000,000 feet of gas. It was flowing into earthen storage when it was first drilled into the sand, awaiting a pipe line, which necessitated the laying of several miles of pipe. The oil is free of water at this time. The well is considered important by oil companies as it indicates the Voshell area is on a big structure that may be productive over an area several miles in a north and south direction. Some express a belief that this area may develop into a larger pool than any yet found in the State with the exception of the Eldorado Field. The well was drilled in the center of a 660-acre block controlled by this company. As the same company owns all the offsets the drilling development will be done in a conservative manner.

McPherson County is the most interesting area in Kansas at this time. Eleven operations are being rushed to the pay horizons at various stages from the surface to 3,300 feet deep. Mid-Kansas Oil & Gas Co.'s No. 1 Kuns, SE cor. SW, Section 11-20-5w, was drilling at 3,345 feet in a cavey hole. This wildcat is expected to be one of the first to reach the pay horizon. A. F. Perry and others' No. 1 Wade, C SE, Section 2-19-4w, was drilling at 3,220 feet. The drilling reports on these tests were made on October 24. In the Voshell Pool several tests are nearing the chat horizon. Mid-Kansas Oil & Gas Co.'s No. 1 Voshell, NE cor. NW NE, Section 9-21-3w, was being drilled at 2,100 feet, carrying a hole full of water. Empire Oil & Refining Co.'s No. 1 Voshell, NE cor. SE NE, Section 9-21-3w, was being drilled while carrying a hole full of water at 2,820 feet. Sinclair Oil & Gas Co.'s No. 1 Voshell, NW cor., Section 10-21-3w, was just getting started and was drilling at 400 feet. Shell Petroleum Corp.'s No. 1 Holmes, NE cor. NW, Section 12-20-2w, was drilling at 2,665 feet.

Community Tests

Another community test is getting under way in Dickinson County. Prairie Oil & Gas Co., Phillips Petroleum Co., and Carter Oil Co., have a rig in for a wildcat test on the Rumbold farm in Section 12-16-2. The test will be drilled to the Simpson horizon on a block of 5,300 acres. Another community test is being drilled about 10 miles south, by the White Eagle Oil & Refining Co., The Texas Company, Carter Oil Co., and others in Section 24-17-2, Marion County. It was drilling at 1,000 feet on October 25.

Production Decline in Sedgwick

The production of Sedgwick County, Kansas, in the middle of last week totaled 21,600 bbls. daily. It amount to a decrease of about 7,000 bbls. daily from the previous week's gauges. Some oil companies estimate the State's production will show a decline of around 5,000 bbls. daily. Most of the flush areas in the State have been prorated, some as much as 50 per cent of the potential. Production in the State is expected to continue declining until the first of the year. All the proration agreements include drilling operations.

New locations reported this week total 27. Greenwood County leads with eight, McPherson and Sedgwick Counties are second with three each, Cowley, Elk and Edwards Counties had two each. The others were scattered.

Plains Oil Co.'s No. 1 Curry, SE cor. SW SW, Section 2-27-1w, Sedgwick County, swabbed 45 bbls. in an hour, and is making around 240 bbls. a day. Part of the big production accumulated when the test was shut down waiting on pipe line connection.

Fisher & Lauck were spudding on the No. 1 Butler, in the NE cor. SW SE, Section 19-27-1e, Sedgwick County, on the east edge of Wichita. The new test is adjacent to the residential section of Wichita. The location was made after the subsurface data had been obtained from other deep tests in that area. It is north of E. W. Marland, Inc.'s No. 1 Mackey, which is pumping around 80 bbls. daily from the chat at approximately 2,960 feet. It is located in Section 30-27-1e. Many predict the pool runs north from the Marland well.

Woods Boyle Oil Corp.'s No. 1 Sandusky, in Section 34-26-1w, Sedgwick County, a mile north of the Plains Oil Co.'s oil well, is attracting considerable attention owing to the fact it is located on the north side of the core drilled area that centers around the Shell Petroleum Corp.'s block. This test found water in the Simpson dolomite at 3,450-51 feet and was drilling at 3,480 feet on October 26.

A producer was added to the Valley Center Pool last week when the Bu-Vi-Bar Petroleum Corp. and others' No. 1 A. Wright found the pay horizon at 3,-336-48 feet, where it started making 50 bbls. of oil an hour. It is located in Section 12-26-1w, Sedgwick County, in the bed of the Little Arkansas River.

Shell Petroleum Corp. missed the chat pay in two of its tests in the Greenwich area, Sedgwick County. The company's No. 1 Borg, NW cor. SW SW, Section 14-26-2, was drilling at 2,960 feet, after finding a small show of oil in the chat at 2,934 feet. The test will be drilled to the deep horizon. The other test is the same company's No. 4-B Lygrisse, in the northwest edge of the Greenwich Townsite. It also missed the chat pay and is drilling for the deeper formations. The same company's No. 1 Erdwein, SW cor., Section 11-26-2, 1½ miles north, has cemented the casing at 2,840 feet, and will drill the plug in a few days. The unexpected developed and it found the chat at 2,857 feet. After drilling in 3 feet, oil rose to the top of the hole in about two hours. It was shut down until storage tanks could be built and a pipe line connection made. The pay horizon was found 50 feet higher than the surrounding wells and indicates that big wells may be expected northeast of Greenwich Townsite Pool.

The Caldwell area in Sumner County looks gloomy at this time. The Mid-Continent Petroleum Corp.'s No. 1 Clark had Wilcox sand at 4,853-70 feet with a hole full of water. It was shut down and will probably be abandoned. The only other operation in the area is the Bu-Vi-Bar and others' No. 1 Wilson, SW cor. NE NW, Section 27-34-2w, Sumner County. It was drilling lime at 4,365 feet.

Sumner County's Decline

The State Line Pool, which is half in Kansas and half in Oklahoma, averaged 1,783 bbls. from the four completed wells for the week ending October 23. The gauges by companies were as follows:

Company, farm—	Wells	Prod.
Amerada, Clark	1	590
Gypsy, Gibson	1	1
Gypsy, Enderude	1	1,101
Gypsy, Williams	1	91
Total	4	1,783

The production in the Churchill and Oxford Pools, Sumner County, has been declining, along with the Sumner and general western Cowley County production. Oxford declined 720 bbls. a day in the week ending October 23. The total daily production of the district was 11,420 bbls. The production by pools was as follows: Churchill (Sumner) 5,-362 bbls.; Oxford Townsite, (Sumner) 3,721 bbls.; Rainbow Bend and Silicious lime district (Cowley) 1,547 bbls.; Carson-Waite (Cowley) 650 bbls.; Miller (Sumner) 140 bbls.

Shell Petroleum Corp.'s No. 1 Armstrong, NE cor., Section 12-33-1, Sumner County, was drilling at 3,050 feet. Tidal Oil Co.'s No. 1 McCutcheon, SW cor., Section 33-34-2, Sumner County, is preparing to pull casing to abandon at a total depth of 3,785 feet, after finding water.

A wildcat test in Saline County was showing oil last Saturday, October 26. Dixie Oil Co. and Amerada Petroleum Corp.'s No. 1 Olsen, NW cor. NE, Section 10-16-3w, found free oil in the top of the lime at 3,308 feet. It had the Hunton lime at 3,235-85 feet. This thin section of Hunton lime indicates the test to be running structurally higher than other tests drilled in the area.

Tom Slick, Inc. and Pryor & Lockhart's No. 1 Shurr, NE cor. SW, Section 21-20-10w, Rice County, is pumping 140 bbls. daily. The oil tests 54 gravity and is the highest gravity well in the State at this time. Same company's No. 1 Sellans, in Section 36-15-13w, Russell County, has 3,000 feet in the hole which has been caving badly. The production was encountered at 3,344 feet, 7 feet higher than in the discovery well.

Barber County

Barbara Oil Co. has the rig on the ground for No. 1 Lanker, C SW SE Section 1-33-13w.

McPherson County

Derby Oil Co.'s No. 1 Giffin, SE cor. SW Section 11-19-2w, is rigging up. McPherson Oil & Gas Co. has the rig up for No. 1 Wallace, C SW Section 12-19-2w. The cellar is dug for No. 1 Koechn, C SE Section 12-20-2w.

Dixie Oil Co. and Amerada Petroleum Corp.'s No. 1 Flook, SW cor. SE NW Section 1-20-2w, has been completed for 625 bbls. in chat 2,942-55 feet. Shell Petroleum Corp.'s No. 3 Ritz, NW cor. NE SW Section 1-20-2w, made 966 bbls. in chat 2,937-78 feet.

Sedgwick County

Wentz Oil Co. is moving tools in for No. 5 Bright, NW cor. NE NW Section 1-26-1w, Valley Center Pool. T. M. Deal

(Continued on Page 120)

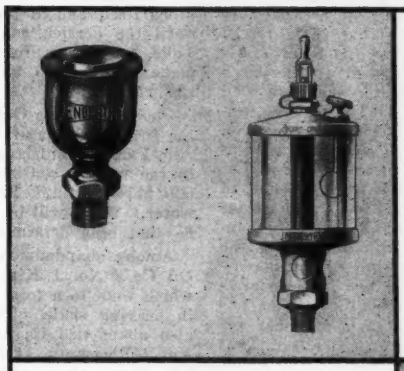
WILDCAT OPERATIONS IN KANSAS

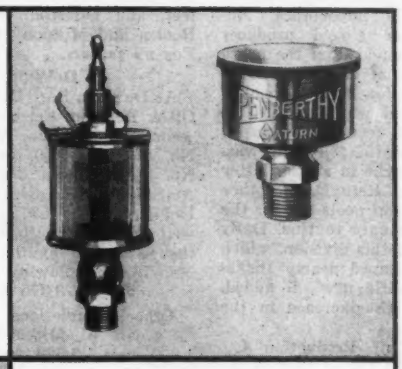
(Descriptions are East unless otherwise marked)

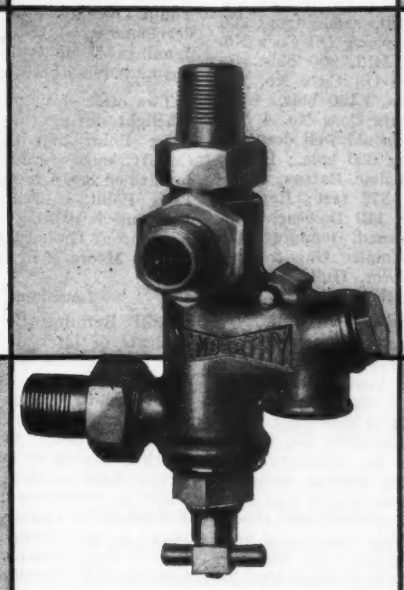
Company, farm and location—	Remarks:
BARBER COUNTY	
Allison & Fitzwilliams' No. 1 Kimberg, NW SE Sec. 2-30-12w	Location.
Rolland & Skelly Oil Co.'s No. 1 Pickens, C NE NW NE Sec. 27-30-14w	Plug back to 4,727-30 ft. to test; total depth 4,735 ft..
Skelly Oil Co.'s No. 1 Temple Ranch, Sec. 13-34-15w	Drlg. 4,180 ft.
Robertson et al's No. 1 Powell, SE cor. SE Sec. 11-32-10w	Shut down 3,260 ft.
Allison & Fitzwilliams' No. 1 Morrisse, C NW SE SE Sec. 9-30-12w	Hole full water 4,652-58 ft.; total depth 4,673 ft.; abandoned.
BARTON COUNTY	
Allison & Fitzwilliams' No. 1 Brodie, NE cor. Sec. 19-16-12w	Drlg. 800 ft.
Slick et al's No. 1 Sweeney, SW NE Sec. 23-17-11w	Shut down 250 ft.
Everett & Wiley's No. 1 Ward, NW cor. SW Sec. 12-20-13w	Shut down 3,948 ft.
BUTLER COUNTY	
Lario O. & G. Co.'s No. 1 Davis, SW SE Sec. 1-27-4	Rig on ground.
Lario O. & G. Co.'s No. 1 Miller, NE SE NE Sec. 36-26-3	Rig.
E. W. Marland, Inc.'s No. 1 Haber, SW NW Sec. 22-27-3	Shut down.
Martin et al's No. 1 Flanigan, C SW SE SW Sec. 29-27-3	Spudding.
Travis et al's No. 1 Harrison, SE cor. Sec. 21-25-3	Total depth 3,190 ft.; abandoned.
Milmac Oil Co.'s No. 1 Clearwater, SW cor. Sec. 33-25-3	Drlg. 3,200 ft.
Sinclair Oil & Gas' No. 1 Johnson, NE cor. Sec. 16-26-3	Drlg. 2,510 ft.
Stroub & Dutton's No. 1 Kibby, SE SW SW Sec. 12-28-3	Rig.
White Eagle's No. 1 Bachelder, SW cor. Sec. 17-25-3e	Drlg. 3,275 ft.
Valley Osage's No. 1 Sirs, SE cor. Sec. 34-23-3	Drlg. 1,575 ft.
CLAY COUNTY	
Chrisler et al's No. 1 Tivier, SW cor. Sec. 19-8-2	Rig on ground.
Derby Oil Co.'s No. 1 Meimueller, C NW SW Sec. 9-10-3e	Shut down 2,200 ft.
Skow Bros.' No. 1 Strud, SW SE Sec. 16-9-4	Shut down 2,510 ft.
COWLEY COUNTY	
A. M. Landon's No. 1 Wheeler, C SW NW SE Sec. 24-30-4	Drlg. 440 ft.
Milton & Mead's No. 1 Tatum, SE cor. SW Sec. 11-31-6	Drlg. 900 ft.
Roth & Farrout's No. 1 Thompson, NE SE Sec. 31-31-8	Machine.
Shawver et al's No. 1 Oldham, NW SE Sec 23-32-3	Drlg. 2,025 ft.
DICKINSON COUNTY	
Hiatt & Durham's No. 1 Wendt, NW cor. Sec. 17-16-2	Rig.
Kruger et al's No. 1 Diche, C NW NE NE Sec. 17 13-4	Drlg. 630 ft.
DOUGLAS COUNTY	
Jenkins & Scott's No. 1 Haden, SE NW Sec. 10-12-17	Drlg. 550 ft.
EDWARDS COUNTY	
Dixie & Amerada's No. 1 McCarty, SW cor. Sec. 22-25-17w	Location.
ELLIS COUNTY	
Streeter & Stearns' No. 1 Leiker, SW NE Sec. 26-13-20w	Shut down 1,020 ft.
Mid-West Exploration's No. 36 Berens, C SE NW Sec. 12-13-16w	Drlg. 3,220 ft.
Byrene et al's No. 1 Fisher, NW SE Sec. 4-11-20w	Shut down 1,000 ft.
Rush Oil Co.'s No. 1 Gatewood, NW cor. NW Sec. 4-15-20w	Fishing 2,555 ft.
ELLSWORTH COUNTY	
Tatlock et al's No. 1 Sackem, C SW SE Sec. 25-17-9w	Shut down 675 ft.
The Texas Company's No. 1 Sherman, NE SW Sec. 16-17-6w	Drlg. 3,310 ft.
FORD COUNTY	
McNabb et al's No. 1 Unknown, C SE Sec. 26-27-22w	Rig.
Swain et al's No. 1 Kenthorne, C NW Sec. 21-25-24w	Drlg. 2,310 ft.
GRAHAM COUNTY	
Gulf Coast Oil Co.'s No. 1 Johnson, C S half Sec. 27-8-25w	Shut down 4,165 ft.
Naylor et al's No. 1 St. John, NW SE SE Sec. 27-8-25w	Rig.
GREENWOOD COUNTY	
F. Konkay et al's No. 1 Rock, NW NE NE Sec. 7-27-12	Shut down 50 ft.
T. K. Simmons' No. 1 Steele, SE NE Sec. 22-22-12	Rig.

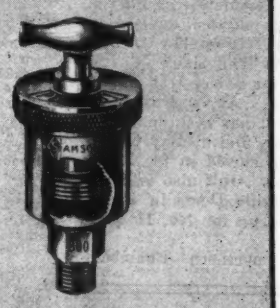
(Continued on Page 165)

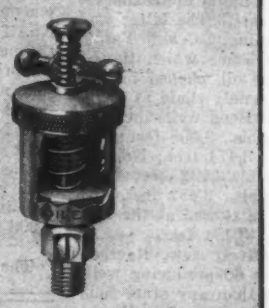
RECOMMENDED BY MANY USERS

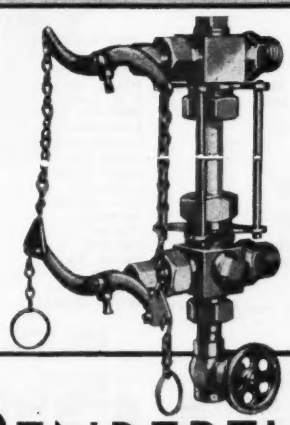












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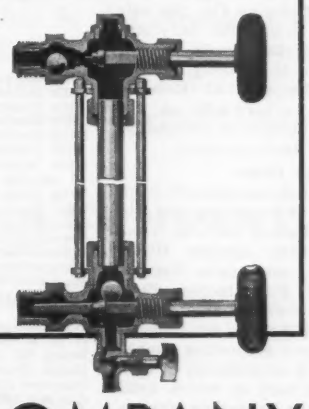

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Good Well on North Side of Big Creek

Raccoon Bend Extended 1,800 Feet East With Series of Good Completions. Refugio Shows Sharp Gain

By Neil Williams
Staff Correspondent, Gulf Coast Fields

HOUSTON, Tex., Oct. 28.—With few exceptions completions on the Gulf Coast the past week were of little importance. Another good producer was added on the north side of Big Creek; production at Raccoon Bend was extended 1,800 feet east, and a series of fair wells was brought in at the latter field, Refugio, and other coastal pools but for the most part these were only routine. Daily average production of this division, which the previous week jumped nearly 16,000 bbls. because of prolific new oil added, showed a further slight increase in the past seven days.

At Big Creek, Gulf Production Co. brought in its No. 56 Davis flowing 3,500 bbls. of pipe line oil daily from sand and shale at a total depth of 4,170 feet. The Gulf company on the Davis tract north of Big Creek apparently has tapped the main productive spot of that dome by bringing in one after another a series of good wells. The fact that Big Creek wells are not very long lived accounts for the failure of production figures of that dome to make themselves felt. Gulf's Davis wells, however, have shown a greater tendency to stay put than most other wells of the field.

Raccoon Bend Leads Completions

In number of completions, Raccoon Bend of Austin County led the coast with six during the week, one of which extended the producing limits approximately 1,800 feet to the east. The latter was Humble Oil & Refining Co. and Valley Oil Corp.'s No. 1 Diemer which flowed 367 bbls. of pipe line oil, choked in, the first 24 hours from sandy shale at 3,389 feet. Other Raccoon Bend wells included No. 5 Mueller, 600 bbls., 3,508 feet; No. 4 Mueller, 300 bbls., 3,474 feet; No. 3-C Grawunder, 420 bbls., 3,132 feet; No. 5-B Dietrichs, 151 bbls., 3,482 feet, and No. 3 Woodley, which flowed at the rate of 300 bbls. daily at 3,484 feet.

Although comparatively new, Raccoon Bend now has nearly 60 producing wells and in area is larger than any other field on the coast. The fact that all wells are pinched in to the minimum has enabled the Humble Oil & Refining Co., the sole operating company, to hold the daily output of the field so that even now it is less than 9,000 bbls. daily. More operations are under way at Raccoon Bend than at any other field on the coast but the great number of ownerships in that area makes that necessary.

Refugio Gains

Refugio Field gained considerable mention the past week with a sharp jump in the daily output, figures for the week averaging 13,748 bbls. against 10,865 bbls. of the preceding seven days. Refugio is a close contender with Raccoon Bend in number of operations, in area and in rapid expansion, although development has been curtailed and production choked down because of lack of facilities to handle the oil, a large part of which until now has had to be run to earthen storage. However, a steady string of good wells for several weeks has forced up production. The fact that the Gulf Coast Pipe Line Co., the only pipe line outlet, has been moving some of its storage at Aransas Pass by tanker permitting an increase in its runs is allowing the boost in daily output of the field.

Three oil wells and two gassers were completed at Refugio during the week. These were Houston Oil Co.'s No. 13 F. B. Rooke, flowing 300 bbls. of pipe line oil from sand at 3,674-82 feet; Morgan Oil Corp.'s No. 2 City, flowing 250 bbls. pipe line oil, sand 3,678-86 feet; Korona Oil Co.'s No. 3 Reilly, 75 bbls., 3,669 feet, and Houston Oil Co.'s No. 2 F. Rooke, and Mission Drilling Co.'s No. 2 Fox as gassers.

DeWalt Wells

At DeWalt, Fort Bend County, Humble Oil & Refining Co. completed three more wells, No. 6 Nelson, 630 bbls., 3,690 feet; No. 8 Camp, 600 bbls., 3,622 feet and No. 3 Deatherage, 270 bbls., 3,737 feet. At Sulphur, Calcasieu Parish, Louisiana, Union Sulphur Co. added another good well in the line it is completing down the west side of the dome. This was No. 752 fee flowing an estimate 1,400 bbls. daily at 3,370 feet.

Other completions included Sun Oil Co.'s No. 51 Mitchell, Liberty, flowing 1,200 bbls., 3,528 feet; Yount Lee Oil Co.'s No. 18 Mitchell, same area, 200 bbls., 3,468 feet; Grayburg Oil Co.'s No. 1 Wilburn, Barbers Hill, 900 bbls., 5,080 feet; Yount Lee Oil Co.'s No. 117 McFaddin, Spindletop, 1,100 bbls., 4,127 feet; Vinton Petroleum Co.'s No. 4 Matilda Gray, Vinton, an old well deepened to 2,938 feet, flowing 600 bbls.; Hill & Dowell's No. 99 Millholme, Batson, pumping 3 bbls. net oil, 373 feet; Republic Production Co.'s No. 119 Dolbear, Hull, a former well deepened, pumping 125 bbls. net oil, and Empire Gas & Fuel Co.'s No. 27 Barngrover, Hull, a former producer, 800 bbls., 3,589 feet.

New Sheeks Field

Following the completion early in the week of Cranfill & Reynolds' No. 3-A Esperson, west offset to Yount Lee Oil Co.'s No. 1 Moores Bluff, discovery well of the new Sheeks Field in western Liberty County, Cranfill & Reynolds' No. 1 Vadjak, north offset to the discovery well, tested salt water and will be deepened. The No. 3-A Esperson, which was in a sand at a total depth of 3,336 feet, flowed at the rate of 400 bbls. daily on a half-inch choke. The Vadjak well, however, was in a deeper sand at a total depth of 4,203 feet.

Depth Record

The depth record on the Gulf Coast was broken again when Yount Lee Oil Co.'s No. 4 Crowley, northeast of the old Jennings Field, went to a total depth of 8,250 feet. Failure to get back to obttom because of heaving shale forced operators to back up to a sand at 7,557-93 feet, which was passed up in search of deeper sands. If this makes a well at that sand it will be the deepest producer on the coast. The company's No. 6 Houssierre-Latrielle, southeast of Jennings, at present is the deepest producer. The latter well completed last June in sand at 7,388 feet continues to produce around 700 bbls. daily on chokes. Of interest in connection with this well is the fact that gas pressure is steadily increasing. This company's No. 7 Houssierre-Latrielle, also on the southeast side, has picked up the deep sand and has cemented 7-inch casing at 7,100 feet. That Yount Lee Oil Co. contemplates an active development of the deep sands off the Jennings Dome is indicated by it having moved in three more heavy derricks.

Two other deep tests also were in the limelight during the week, one each at Long Point and Orchard, Fort Bend County, each of which is the deepest so far drilled on their respective domes. At Long Point, Gulf Production Co.'s No. 12 Trone is drilling in sand below 6,000 feet and at Orchard the same company's No. 19 Moore is in sticky shale at 6,242 feet.

Louisiana Wildcats

Gulf Refining Co. is starting three wildcats of interest in southern Louisiana, one at Thibodaux (Lutcher), another at Napoleonville, Assumption Parish, and the third on a geophysical dome, Bay Champagne (Bayou LaFourche) in LaFourche Parish. At Thibodaux No. 25 Stark is rigging up for a deep test, others having been shallow. At Napoleonville, where no development has been done, No. 1 Armistee is rigging, and at Bay Champagne a rig is being moved in for No. 1 City of New Orleans. Gulf also is going back to the Loreauville Dome in Iberia Parish and is rigged up for No. 11 Louisiana State.

At Lost Lake, northern Chambers County, Pure Oil Co.'s new salt dome field, No. 6 Mayes blew out while drilling at 2,215 feet. The well, however, killed itself and at present is shut down until the derrick can be rebuilt. Lost Lake, with two producers, continues to make around 600 bbls., and has seven rigs running.

Shell Petroleum Corp.'s No. 3 Wilbert, the first producer at White Castle, Iberville Parish, Louisiana, completed earlier in the month, continues to flow around 600 bbls. of fluid, 92 per cent b.s. and water. What will be done with the well has not been determined.

Among abandonments were Yount Lee Oil Co.'s No. 1 Kirby at Barbers Hill, which went to a total depth of 7,502 feet in heaving shale. The Texas Company also abandoned its deep test at Boling, No. 2 Pleasants, at 5,299 feet. Rycade Oil Corp. abandoned No. 3 State at Bayou Bouillon.

Daily Average Production

Daily average production of coastal fields for the week ending October 26 was:

TEXAS

Allen	10
Barbers Hill	19,931
Batson	1,237
Big Creek	5,126
Blue Ridge	2,646
Brenham	210
Boling	1,397
Clay Creek	1,965
Damon Mound	505
DeWalt	12,364
Fannette	4,110
Goose Creek	5,612
Hankamer	133
High Island	1,376
Hull	10,910
Humble	12,742
Jasper County	40
Lost Lake	690
Markham	375
Nash	500
North Dayton	440
Orange	2,842
Orchard	101
Pierce Junction	9,492
Port Neches	1,526
Refugio	13,748
Raccoon Bend	8,464
Sheeks	425
Saratoga	990
Sour Lake	2,553
So. Liberty-So. Dayton	6,403
Spindletop	24,606
West Columbia	6,541
Total West Coast	160,060
Week ending October 19	158,265
Increase	1,795

SOUTH LOUISIANA

Anse La Butte	56
Bayou Bouillon	177
Bayou Blue	70
Black Bayou	51
Dog Lake	18
Edgerly	685
Jennings	1,360
Hackberry	3,897
Lake Barre	572
Lake Pelto	262
Lockport	3,767
New Iberia	30
Sorrento	145
Starks	388
Sulphur	7,000
Sweet Lake	20
Vinton	4,987
Welsh	285
White Castle	48
Total South Louisiana	23,812
Week ending October 19	23,973
Decrease	161
Total Gulf Coast	183,872
Week ending October 19	182,238
Increase	1,634

GULF COAST FIELDS AND WILDCATS

Week Ended October 26.

BARBERS HILL—CHAMBERS COUNTY

Joe Bashara's No. 1 Tarbutton, east side	Reset screen 5,264 ft.; swabbing.
Mills Bennett Production Co.'s No. 1 Collier (southeast)	Waiting cement to set.
Mills Bennett Production Co.'s No. 2 Collier (southwest)	Derrick.
Mills Bennett Production Co.'s No. 2 Barber, north side	Drlg. gumbo 1,330 ft.
Mills Bennett Production Co.'s No. 3 Smith (workover)	To pump 5,185 ft.
Mills Bennett Production Co.'s No. 4 Smith, east side	Drlg. lime 1,019 ft.
Mills Bennett Production Co.'s No. 3 Hammon-Armstrong (southeast)	Drlg. gumbo 1,236 ft.
Mills Bennett Production Co.'s No. 1 Wilburn (southeast)	Derrick.
Gulf Prod. Co.'s No. 1 Wilburn	Drlg. hard sand 1,809 ft.
Humphreys Corp.'s No. 8-A Kirby, north flank	Fishing 6,440 ft.
Humphreys Corp.'s No. 6-H Kirby east side	Cemented casing 4,986 ft.
Humphreys Corp.'s No. 7-H Kirby, east side	Drlg. hard sandy lime 4,249 ft.
Humphreys Corp.'s No. 2-C Kirby	Reaming 4,000 ft.
Humphreys Corp.'s No. 6-B Kirby (workover)	Milling 4,058 ft.
Humphreys Corp.'s No. 1 Higgins	Swabbed some oil in cap rock 841 ft.; to pump.
Humphreys Corp.'s No. 1 Scott	Location.
D. B. McDaniels' No. 3 Woodward	Drlg. shale 4,665 ft.
Rexal Oil Co.'s No. 3 McLean, east flank	Sidetracking.
Rexal Petroleum Co.'s No. 1 Smith (east)	Rig.
Superior Oil Corp.'s No. 2 Illfrey (east)	Spudded.
Sinclair Oil & Gas Co.'s No. 1 McKinney (southeast)	Bailed salt water 5,459 ft.
Sun Oil Co.'s No. 2 McKinney (southeast)	Tested salt water 5,727 ft.
Sun Oil Co.'s No. 1 Wilburn (southeast)	Drlg. sandy shale 5,419 ft.
Sun Oil Co.'s No. 2 Wilburn, southeast	Drlg. gumbo 1,729 ft.
Sun Oil Co.'s No. 1 J. Wilburn	Cemented casing 5,142 ft.; total depth 5,230 ft.
The Texas Company's No. 1 Wilburn (southeast)	Drlg. sandy shale 4,900 ft.
The Texas Company's No. 2 Wilburn, southeast	Drlg. hard sand 4,001 ft.
The Texas Company's No. 3 Wilburn, southeast	Drlg. plug 5,000 ft.
The Texas Company's No. 1 Lawrence	Drlg. shale 3,188 ft.
Yount Lee Oil Co.'s No. 8 Chambers, south	Sand and shale showing oil 5,238 ft.
Yount Lee Oil Co.'s No. 9 Chambers, south	Drlg. sand rock 2,092 ft.
Yount Lee Oil Co.'s No. 1 Kirby, southeast	Abandoned in heaving shale 7,502 ft.
Yount Lee Oil Co.'s No. 3 Woodward (southeast)	Cemented casing 4,952 ft.
Yount Lee Oil Co.'s No. 4 Woodward, southeast	Drlg. gumbo and lime 2,875 ft.
Yount Lee Oil Co. No. 5 Woodward, southeast	Rig.

(Continued on Page 116)

OIL FIELD BRINES

The article published in The Oil and Gas Journal on September 12, page 39, under the title "Oil Field Brines Present a Problem," was part of Technical Paper Serial No. 2,945, written by Ludwig Schmidt and John M. Devine, and published by the United States Bureau of Mines under the title "The Disposal of Oil Field Brines."

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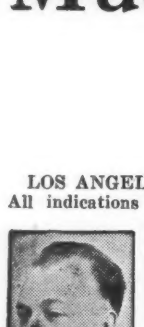
THE Moore Champion DERRICK

Much New Work at Santa Fe Springs

Trend of Production in California Upward Unless Operators Co-operate and Make Curtailment Effective Quickly

By L. P. Stockman
Staff Correspondent, California Fields



LOS ANGELES, Calif., October 26.—All indications point to an increase in state production during the course of the next thirty days unless operators find some way of retarding production and development work. Most of the expected increase will be due to the completion of new wells at Santa Fe Springs, although drilling operations out in the Maricopa flats section of the Midway-Sunset Field may also be a contributing factor. Long Beach and Ventura Avenue will probably hold relatively stable although the output of both may be curtailed in conformity with the gas conservation law at a later date. The Elwood Field of Santa Barbara County would under ordinary conditions show substantially increased production within the next 30 days, but the Barnsdall and Rio Grande have just made a 30 per cent artificial curtailment and the output of this field will therefore be regulated. There are quite a number of wells rotating ahead in the oil sand at Santa Fe Springs and unless some drilling agreement is made many of them should be tanking oil before another month draws to a close.

Considerable new work is getting under way at Santa Fe Springs and this tends to indicate that field production should continue at a high rate well into 1930 unless regulatory measures are invoked. Even if the gas conservation law or mutual curtailment should result in a reduction in production this field is bound to be an important factor for the greater part of another year as any regulation would merely retard production. The Union Oil Co. is starting 12 new projected deep zone wells and all of them should get under way soon. The Shell is also starting a flock of new projects and will likewise rush work ahead as quickly as possible. The General Petroleum will probably start some new work from time to time as present drilling projects are completed although this company has not let any grass grow under its feet during the past year. It is running 52 strings of tools at the present time and will probably continue to operate at this rate as long as developments warrant. Other companies are also expected to initiate additional drilling during the course of the next few months.

The Union Oil Co. finished three wells at Santa Fe Springs during the past week but subsequently killed two of them in order to add a little more hole. These were No. 32 Bell, which showed a preliminary flow of 575 bbls. daily from the O'Connell horizon at 6,915 feet and No. 38 Bell which flowed at the rate of 600 bbls. per day from the Clarke horizon at 7,460 feet. Both of these wells, incidentally, were originally completed in the upper zones. No. 45 Bell, a new well, was kept on production following completion at 6,850 feet as the output subsequently built up to 2,090 bbls. of clean 33.1 gravity oil daily. The Union's next two completions in this field should be No. 50 Bell, rotating ahead in the oil sand at 7,335 feet, and No. 9 Howard, which is in the pay at 7,373 feet. The Allison Syndicate successfully finished its initial completion in the Santa Fe Spring when its No. 1 Springs, a new well, was brought in flowing 1,760 bbls. of clean 34.5 gravity oil from 7,015 feet, the oil having been finished with a 4¾-inch oil string carrying 715 feet of perforated.

The General Petroleum finished two wells in this field during the past seven day period. The company started off the week by recompleting No. 114 Jalk flowing 1,495 bbls. of clean 34.1 gravity oil daily from 8,095 feet and followed this up by finishing No. 146 Santa Fe, a new well doing 1,160 bbls. daily from the Nordstrum horizon at 5,325 feet. The Star Petroleum also chalked up two completions during the past seven days' period, No. 2 Springs coming in for 2,260 bbls. daily from 6,297 feet and No. 4 for 2,160 bbls. from 7,983 feet. The Standard Oil Co., with thirty strings of tools to its credit, successfully recompleted No. 15 Walker doing 871 bbls. of 34.6 gravity oil daily from the Clarke zone at 7,903 feet. The Texas Company did not break into the completion column this week but has five tests scheduled to be brought in within the next 15 days. The General Petroleum should also list several Clarke zone completions during the next few weeks as it has eight wells actually in the oil sand at the present time. Other companies expected to finish new wells in the Clarke horizon in the very near future include the Commodore Oil Co., with four wells actually in the pay, Bandini Petroleum, H. R. Macmillan, Richfield Oil Co., Rio Grande and Wilshire Oil Co. George F. Getty, with three projects actually rotating ahead in the oil sand, Standard with two. Union with three and Universal Consolidated with two should also increase their list of producers soon. The Shell Co.'s No. 22 Golay, a recent completion doing 3,180 bbls. daily from 7,835 feet, died several days ago, and this project, together with three more drilling ahead in the oil sand, should be tanking oil shortly. The Commodore Oil Co. successfully finished No. 5 Babonett a few days ago and this new well is doing 2,515 bbls. of unusually clean 34.1 gravity oil and 2,900,000 feet of wet gas daily from the Clarke zone at 7,955 feet. The Associated also chalked up a new well this week when No. 4 Fulton was brought in flowing 2,150 bbls. of 33.1 gravity oil daily from 7,985 feet. The General Petroleum Corporation, a subsidiary of the Standard Oil Co. of New York, heads the production list with a current daily output of 51,000 bbls., followed by the Union with 50,000 bbls., Standard with 35,000 bbls., Wilshire with 24,000 bbls., The Texas Co. with 22,000 bbls., Shell with 16,000 bbls. and George F. Getty with 15,000 bbls.

TANKER SHIPMENTS FROM LOS ANGELES TO ATLANTIC AND GULF COAST PORTS

Commodity—	Total this week	Daily average	Total last week	Daily average	This year to date	Same time last year
Crude oil	.....	.....	.....	.....	997,250	2,839,582
Fuel oil	.....	.....	.....	.....	457,175	143,471
Diesel and gas oil	145,211	20,744	74,475	10,645	2,102,799	1,674,439
Gasoline	133,052	19,007	478,245	68,321	16,805,021	11,689,622
Kerosene	.....	.....	.....	.....	49,750	.....
Naphtha distillate	.....	.....	.....	.....	81,750	339,100
Coastwise—						
Crude oil	432,088	61,727	390,759	55,823	22,690,603	20,469,477
Fuel oil	318,358	45,480	533,873	76,268	16,030,754	13,754,811
Diesel and gas oil	10,478	1,497	53,831	9,690	1,001,887	963,780
Gasoline	282,610	40,373	130,813	18,688	9,149,783	7,786,405
Kerosene	478	68	.....	.....	69,987	65,898
Naphtha distillate	.....	.....	.....	.....	.....	171,566
Exports—						
Crude oil	145,059	20,723	117,736	16,819	4,851,133	1,785,457
Fuel oil	195,935	27,991	690,211	98,602	15,273,536	18,907,937
Diesel and gas oil	171,218	24,460	24,225	3,461	2,275,455	1,967,340
Gasoline	386,593	55,228	20,610	2,944	9,990,396	6,139,290
Kerosene	.....	.....	127,619	18,231	2,698,903	3,486,074

TANKER SHIPMENTS FROM SAN FRANCISCO TO ATLANTIC AND GULF COAST PORTS

Diesel and gas oil	.....	.....	.....	.....	.....	342,425
Gasoline	68,135	9,734	87,090	12,441	1,973,172	1,750,169
Lubricants	.....	.....	.....	.....	138,706	277,151
Coastwise—						
Fuel oil	62,000	8,857	274,265	39,181	2,689,753	3,050,072
Diesel and gas oil	.....	.....	.....	.....	359,058	267,211
Gasoline	99,000	14,143	30,092	4,300	4,180,908	3,863,914
Kerosene	17,640	2,520	4,998	714	162,085	203,177
Exports—						
Crude oil	.....	.....	.....	.....	121,603	96,250
Fuel oil	.....	.....	55,780	7,969	778,606	2,063,154
Diesel and gas oil	.....	.....	.....	.....	326,657	10,400
Gasoline	182,650	26,093	261,126	37,304	4,640,352	3,822,518
Kerosene	.....	.....	.....	.....	528,060	470,760
Lubricants	.....	.....	.....	.....	25,713	33,535

Long Beach

There were six wells finished at Long Beach during the past week but in spite of this field production registered a slight decline. Warren & Macrate topped the completion list by bringing in No. 3 Neet, a new well flowing 1,020 bbls. of 27.1 gravity oil and 1,850,000 feet of natural gas daily from the Miocene at 7,298 feet. Allen Brown also finished a good well during the week as his No 1 James, a new well, came in flowing 851 bbls. of clean 29.7 gravity oil and 2,900,000 feet of saturated gas daily from 7,252 feet. No. 11 Herwick of the Keck Syndicate a former upper zone producer, was returned to production flowing 540 bbls. of 29.6 gravity oil and 1,750,000 feet daily after being redrilled and deepened to 7,210 feet. Otis Hoyt put his No. 6 Signal on a preliminary production test at 7,384 feet and, while this project came in doing 500 bbls. daily, it will probably require further work as the output is cutting approximately 50 per cent. The Graham & Loftus Oil Co. had better luck with No. 2 Davis, another new well as this producer is good for 365 bbls. of 28.9 gravity oil daily from 6,800 feet. J. L. Roggie successfully recompleted his No. 4 Signal, a former upper zone producer, after redrilling and deepening it to 6,830 feet, and this project is being listed as a satisfactory completion doing 440 bbls. of 30.1 gravity oil daily.

Although drilling and production activities in the Long Beach Field will probably be adversely affected by the recent cut in crude oil prices, no let up in work is anticipated in the southeastern end of the field where a number of fairly large wells have been finished during the past few months. Considerable interest has been manifested in this area and several new wells are expected to get under way soon. The sustained production wells has already interested a number of operators, including the Plymouth Petroleum, Bixby & McAdams, Petroleum Securities and a number of others. No. 1 Sievers of The State Co., No. 3 Frye of the Richfield Oil Co. and No. 8 Patton of the Shell are indicative of the flush condition of this particular area. The Shell's producer, which came in flowing 2,665 bbls. per day from 6,672 feet in March of this year, is still doing a little better than 1,900 bbls. daily. No. 3 Frye, originally finished making 3,740 bbls. per day from 6,402 feet in February, 1928, is still flowing 1,650 bbls. per day, while No. 1 Sievers of The State Co., finished last July doing 2,380 bbls. per day from 6,819 feet, is making 1,425 bbls. every 24 hours. This trio of wells has focused the attention of operators on this area from time to time and several other good producers should be finished in the near future. The City of Long Beach, as lessor of municipally owned land, has agreed to permit its lessee, the A. T.

FOUR PRODUCERS IN MUSKEGON AREA; THREE SMALL WELLS IN MT. PLEASANT

By Special Correspondent

MUSKEGON, Mich., Oct. 28.—Four new oil wells were added to the western Michigan Field last week. Three were in Laketon Township and one in Muskegon Township.

Nelson & Witt, Inc. reported their No. 2-B George Fenner, NE SW, Section 11-10-17, as a 300-bbl. well at 2,055-59 feet. The Johnson Oil Refining Co.'s No. 16 John Thompson made 140 bbls. in 12 hours at 2,049-57 feet. The company had planned to drill a deep test to the Niagara or Trenton Rock on this lease, in the center of the Laketon Township producing area in the Dundee. Failure in their No. 1 Sovacool, SW SE, Section 2-10-17, caused them to abandon plans for the Thompson deep test for the present at least.

The third new Dundee oil producer in Laketon Township is Neely, Forster and Senn's No. 1 H. Buteau, SE NE, Section 12-10-17. It will make about a 50-bbl. pumper in the Dundee pay sands at 2,020-28 feet.

The Muskegon Oil Corp.'s No. 8 Stanley Daniloff, SE SW, Section 5-10-16, was the only new well completed in Muskegon Township. It was shot at 1,887 feet and probably will make about 100 bbls. on the pump in the lower Traverse.

There are 24 other active wells in the field. More upper Traverse oil producers are being deepened to the lower Traverse or Dundee than ever. Most of the wells are on the pump.

The Blue Arrow Petroleum Co., headed by C. B. Jetter, Oceana wildcatter, is deepening Bradley and Bradley's No. 1 Kooi and has asked a permit to drill a new well on the Wolverine Mineral Development Co.'s Workman lease. Both are in Section 8, Muskegon Township.

Only one new location was made this week, Thompson Brothers and E. M. Self's No. 2 Henry Smeltekop, SE NW SW, Section 5-10-16, Muskegon Township.

Mount Pleasant

All of the three Mount Pleasant Field completions last week were comparatively small Dundee oil producers in Chippewa Township, Isabella County. The Leonard Oil & Gas Co.'s No. 5 Virgil McClintic, NW NE, Section 11-14n-3w, Chippewa Township, made about 150 bbls. initial. The Chippewa Oil & Gas Co. got a 90-bbl. initial producer in No. 5 Joslin, NW SW, Section 12-14-3. The

(Continued on Page 120)

Jergins Syndicate, to temporarily suspend production on a number of producing wells located on a 140 acre tract due to the recent drastic cut in crude oil prices. The Shell Oil Co. is still the largest single producer in the Long Beach Field and will probably continue to rate this distinction indefinitely due to its large holdings. This company is producing 33,500 bbls. daily, followed by the Richfield with 22,000 bbls., Dabney & Johnston with 13,000 bbls., The Texas Company with 8,500 bbls., Union with 3,250 bbls. and General Petroleum with 2,500 bbls.

Rosecrans

Operators in the Rosecrans Field of Los Angeles basin witnessed a spectacular gas blow out during the early part of the past week when an old abandoned well of the Julian Petroleum Co. suddenly came to life and began shooting mud and gas into the air for a distance of 300 feet. The well in question was Julian's No. 8, abandoned as a duster back in 1926 after a series of mechanical difficulties. Casing had been pulled and the hole plugged up in accordance with rules of the State Oil and Gas Department. The Julian Petroleum quitclaimed the property in question after abandoning the well and because of this operators are wondering who will be liable for the damages resulting to surrounding residences, several of which have suffered considerable damage. The well blew in doing about 2,000,000 feet of gas and about 5,000 bbls. of mud and water and inundated the entire area. It was still blowing at last reports and will probably continue its rampage for several days as control work would be difficult due to the fact that there is no pipe in the hole.

Potrero

There were no developments of importance in the Potrero Field of Los Angeles basin during the past week, although several new wells got under way in the town lot area where an intensive drilling campaign was inaugurated several weeks ago. This area is especially conducive to fast drilling and it is quite likely therefore that several projects will be in a position to make a bid for production some time within the next few weeks. The lid seems to be off again in the Huntington Beach Field and as a consequence deep zone exploration work has been resumed. The Invader Oil Co. failed to secure commercial production in its No. 1 Mills and drilling has been resumed with the expectation of carrying this project down for a deep conclusive test. Several other wells in this field may also be sent down in search of a new productive horizon but most operators have put the brakes on this drilling as they do not wish to precipitate another intensive drilling campaign in the face of existing conditions.

Midway-Sunset

Development work in the Midway-Sunset Field of Kern County was conspicuous this week because of the starting of several new wells out in the Maricopa Flat section and the completion of a new producer in Section 8-11-23. The new well added was No. 4 Sunset of the North American Consolidated and this project, like its immediate predecessors, showed favorable production. It came in under a natural flow doing 930 bbls. of exceptionally clean 24.1 gravity oil daily from 3,313 feet, the hole having been finished with a 6¼-inch oil string carrying 118 feet of perforated. There are a number of other wells nearing completion in this section of the Midway-Sunset Field and, judging by the present scope of work, substantial production should be developed during the course of the next several months.

The Texas Company finished an especially good well in the Mount Poso Field of Kern County a few days ago when No. 3 Vedder, in Section 4-27-28, was brought in flowing 695 bbls. daily from 1,662 feet. The Pacific Western Oil Co. also finished a new producer in this field during the past week but this project, No. 6 Rench in Section 22-27-28, was not actually put on production. The Petroleum Securities followed a similar procedure with No. 17 Glide in Section 21-27-28, as operations were temporarily suspended at 1,655 feet following completion of a water shut off. The policy of drilling wells down to the top of the pay has become a common practice in the Mount Poso Field as operators for the most part are not desirous of placing any great number of new wells on production at the present time. It is quite obvious, however, that it would not take very long to drill into the oil sand whenever this oil is needed. In the Round Mountain Field, the Shell successfully completed No. 8 Jewett in Section 29-28-29 and this new well, which was bottomed at 1,620 feet and finished with a 3-inch oil string carrying 387 feet of 80 mesh screen, is doing 252 bbls. of clean pipe line oil daily. Drilling operations in the Mount Poso Field have been restricted since the discovery of this field due to the absence of pipe line facilities. The laying of a pipe line out of this district will now permit production, however, and the Shell is taking advantage of this recent installation by starting four new wells on the Jewett and Freeeman leases.

Ventura Avenue

Two new wells were put on production in the Ventura Avenue Field during the week, both of them standing to the credit of the Shell Oil Co. These two new acquisitions were No. 32 Gosnell, which came in flowing at the rate of 1,000 bbls. daily from 7,686 feet, and No. 33 Taylor, flowing 495 bbls. per day from an even 7,000 feet. The latter is flowing under a pressure of 750 pounds but seems rather slow in getting under way. Several other drilling projects in this field are scheduled for early completion and, judging by the amount of work under way, we may anticipate additional completions from time to time during the course of the next several months. The General Petroleum has started rig construction for its first tideland well to be located out in the open ocean beyond the shore line in the Rincon Field of Ventura County and actual spud should be made shortly. Additional tideland development is also scheduled to get under way in the Elwood Field of Santa Barbara County, located approximately 25 miles west of Rincon. The Barnsdall, Elwood Exploration Co. and Signal Oil & Gas Co. are all making preparations to start new wells out beyond the tide line. The Barnsdall and Rio Grande, incidentally, have just hit the pay in Well No. 1 on tideland drilling permit No. 94 and this project should be tanking oil within the next ten or fifteen days. These companies successfully finished No. 8 Bell Luton during the early part of the week and this new well, the thirteenth producer to be completed in the Elwood Field by the Barnsdall and Rio Grande, came in flowing 4,800 bbls. of the usual clean 38.5 gravity oil daily from 3,621 feet. As has already been mentioned, production at Elwood is being pinched back 30 per cent in order to forestall the probability of a price cut in crude oil.

Kettleman Hills

There were no developments of special importance in the Kettleman Hills Field of Kings County, although the spudding in of two wells on fee owned acreage warrants more than passing mention as this work may exert a big influence on the Kettleman Hills' agreement some eight or nine months hence. The two new wells started were No. 1 Whepley in Section 35-21-17 and No. 1 Huffman of the Superior Oil Co. in Section 29-21-17. George F. Getty spudded in the first well started on fee owned acreage in the Kettleman Hills Field several weeks ago and has already reached a depth of 2,350 feet in this project. No. 1 Erwin, located in Section 20-23-19. Only a few wells have been affected by the Kettleman Hills' agreement up to the present time, drilling operations on three wells having been suspended some time ago in conformity with the stipulations of that pact.

Wildcat Exploration

Exploration work in wildcat territory occupied a prominent part in California development work during the past week. One area in particular looks exceptionally promising and I am rather inclined to believe that another new oil field will be added to California's rapidly growing list in the very near future. The area in question is located about 4 miles west of Gaviota in Santa Barbara County where the Western Gulf Oil Co. has been prospecting an anticline of undetermined potentialities. The Western Gulf's first wildcat at Gaviota was abandoned a few

(Continued on Page 120)

IMPORTANT NORTHERN CALIFORNIA WILDCATS

Company, well location—	S-T-R	Depth	Status
Union, No. 1 Buel Canyon, Santa Barbara Co.	X- 7-31	1,945	br sh. drilling
Western Gulf, No. 2 Gaviota, Santa Barbara Co.	X- 5-33	3,156	cemented
Standard, No. 1 Point Conception, Santa Barbara Co.	X- 5-34	2,428	cleaning out
Standard, No. 1 Point Arguello, Santa Barbara Co.	35- 6-36	2,042	sd. sh. drilling
Gaviota Oil Co., No. 1 Lompoc, Santa Barbara Co.	9- 7-35	2,406	hd. sd. drilling
Calif. Oil Prop., No. 1 San Marcos, Santa Barbara Co.	3- 4-28	1,711	sd. sh. drilling
Carey, A., No. 1 Goleta, Santa Barbara Co.	1- 4-28	1,311	sespe, drilling
General Pet., No. 1 Goleta, Santa Barbara Co.	21- 4-28	4,533	gas well—idle
General Pet., No. 2 Goleta, Santa Barbara Co.	21- 4-28	1,484	sd. sh. drilling
Petroleum Securities, No. 1 Goleta, Santa Barbara Co.		5,280	br. sd. drilling
Standard, No. 2 Goleta, Santa Barbara Co.		mtl.	building rig
Tannehill, L. B., No. 1 Elwood, Santa Barbara Co.	24- 4-29	2,890	sd. sh. drilling
Standard, No. 1 County Farm, Santa Barbara Co.	11- 4-28	Rig	rigging up
System Oil Co., No. 1 Orcutt, Santa Barbara Co.	36-10-34	4,297	suspended
Keystone Oil Co., No. 1 Santa Maria, Santa Barbara Co.	33-10-34	4,215	br. sh. drilling
Wildcat Oil Co., No. 1 Santa Maria, Santa Barbara Co.	20-10-35	3,350	br. sh. drilling
Pacific Western, No. 1 Gibraltar, Santa Barbara Co.	14- 5-27	1,160	sd. sh. drilling
Gilmore Oil Co., Santa Barbara Co.	1- 5-28	mtl.	building rig
Shell, No. 1 Summerland, Santa Barbara Co.	18- 4-25	629	sd. drilling
Continental, No. 1 Carpenteria, Santa Barbara Co.	33- 4-24	4,130	gas well—idle
Continental, No. 2 Carpenteria, Santa Barbara Co.	33- 4-25	4,495	cleaning out
Standard, No. 5-9 Saticoy, Ventura Co.	10- 2-22	8,154	redrilling
Bolsa Chica, No. 1-A Temescal, Ventura Co.	4- 4-18	1,100	hd. sd. drilling
Associated, No. 1 Rincon, Ventura Co.	19- 4-24	mtl.	building rig
Miley, E. J., No. 2 Red Mountain, Ventura Co.	7- 3-23	1,870	cleaning out
Frank Oil Co., No. 1 Fillmore, Ventura Co.	35- 4-20	2,168	hd. sd. drilling
Continental, No. 1 Sulphur Mountain, Ventura Co.	21- 4-22	3,765	suspended
Continental, No. 2 Sulphur Mountain, Ventura Co.	22- 4-22	6,740	suspended
Continental, No. 3 Sulphur Mountain, Ventura Co.	21- 4-22	4,711	hd. sd. drilling
Lockwood Oil Co., Well No. 1, Ventura Co.	28- 8-21	645	hd. sd. drilling
Milham Explin., No. 1-A Buttonwillow, Kern Co.	8-28-23	4,662	gas well—idle
Milham Explin., No. 2 Buttonwillow, Kern Co.	8-28-23	2,730	gas well—idle
Milham Explin., No. 3 Buttonwillow, Kern Co.	8-28-23	2,694	gas well—idle
Milham Explin., No. 4 Buttonwillow, Kern Co.	6-28-23	2,670	gas well—idle
Milham Explin., No. 5 Buttonwillow, Kern Co.	5-28-23	2,500	gas well—idle
Milham Explin., No. 6 Buttonwillow, Kern Co.	8-28-23	2,676	gas well—idle
Milham Explin., No. 7 Buttonwillow, Kern Co.	6-28-23	2,720	suspended
Milham Explin., No. 8-A Buttonwillow, Kern Co.	8-28-23	2,673	gas well—idle
Milham Explin., No. 9 Buttonwillow, Kern Co.	8-28-23	4,912	fishing
Milham Explin., No. 10 Buttonwillow, Kern Co.	8-28-23	2,672	suspended
Elmer Oil Co., No. 1 Shafter, Kern Co.	8-28-25	6,067	suspended
Elmer Oil Co., No. 1 Bena, Kern Co.	15-30-30	3,640	hd. sd. drilling
Elmer Oil Co., No. 1-A Rosedale, Kern Co.	33-29-26	5,260	sd. sh. drilling
General Pet., No. 1 Rosedale, Kern Co.	13-29-26	3,664	gr. sd. drilling
The Texas Company, No. 1 Edison, Kern Co.	23-29-29	2,365	hd. sd. drilling
Symark Oil Co., No. 1 Edison, Kern Co.	24-29-29	2,130	br. sh. drilling
McVey, Max, No. 1 Jasmine, Kern Co.	23-25-27	Rig	rigging up
Shell Oil Co., No. 1 Lerdo, Kern Co.	5-29-27	5,350	hd. sd. drilling
Union, No. 2 San Emidio, Kern Co.	5-10-21	3,666	reaming
Mallery Willard, No. 1 San Emidio, Kern Co.	9-10-23	...	building road
Currency Pet. Co., No. 1 Jacalitos, Fresno Co.	28-21-14	2,386	sd. sh. drilling
Currency Pet. Co., No. 2 Jacalitos, Fresno Co.	14-21-14	354	suspended
Hornaday & Huggins, No. 1 Kerman, Fresno Co.	32-14-18	4,890	suspended
Rio Grande Oil Co., No. 1 Kerman, Fresno Co.	14-13-17	1,080	sd. sh. drilling
Cates Oil Co., No. 1 Joaquin Ridge, Fresno Co.	7-19-15	114	suspended
Oceanside Oil Co., No. 1 Krayenhagan, Fresno Co.	33-22-17	138	suspended
Petroleum Securities, No. 1 Huron, Fresno Co.	20-20-16	695	suspended
Petroleum Securities, No. 2 Huron, Fresno Co.	28-20-16	6,542	oil sand
Pismo Dome Oil Co., No. 2 Pismo, San Luis Obispo Co.	5-32-13	830	sd. sh. drilling
Union, No. 1 Huasna, San Luis Obispo Co.	34-32-15	3,970	br. sh. drilling
Union, No. 1 North Huasna, San Luis Obispo Co.	12-32-14	4,570	br. sh. drilling
Midwest Refg. Co., No. 1 Huasna, San Luis Obispo Co.	34-31-15	2,212	pipe froze
Panorama Oil Co., Well No. 1, San Luis Obispo Co.	7-31-21	4,019	cleaning out
Paso Robles Synd., No. 1 Creston, San Luis Obispo Co.	27-27-11	3,742	br. sh. drilling
Latin Amer. Oil Co., No. 1 Shandon, San Luis Obispo Co.	31-27-15	3,910	sd. sh. drilling
Colusa Oil Co., Well No. 1, Colusa Co.	31-15- 4	650	hd. sd. drilling
North Counties Oil Co., Well No. 2, Humboldt Co.	36- 2- 1	2,205	suspended
Humboldt Oil Co., Well No. 1, Humboldt Co.	6- 2- 1	3,041	suspended
Kuhns, H. L., Well No. 1, Merced Co.	8-12-19	660	suspended
Foster & Hamil, Well No. 1, Alameda Co.	21- 3- 3	1,160	hd. sd. drilling
Shell, No. 1 Dudley, Monterey Co.	15-22- 9	4,440	sd. sh. drilling
Chessher, H. B., No. 1 Dudley, Monterey Co.	8-22- 9	245	suspended
Union, No. 1 King City, Monterey Co.	8-22- 8	2,079	recemented
Standard, No. 1 King City, Monterey Co.	23-22- 7	1,901	br. sh. drilling
Continental, No. 1 Bradley, Monterey Co.	32-24-11	5,955	suspended
Tuck Oil Co., No. 1 Los Gatos, Santa Clara Co.	15- 8- 1	852	suspended
Penn Western, No. 1 Tulare Lake, Kings Co.	24-21-18	1,345	sd. sh. drilling
Dudley Ridge Synd., No. 1 Tulare Lake, Kings Co.	12-23-19	1,305	gas, well-sh. in
O'Donnell, J. E. No. 1 Dudley Ridge, Kings Co.	7-23-20	1,490	sd. sh. drilling
Porter, H. B., No. 1 Devils Den, Kings Co.	9-24-17	2,245	hd. sd. drilling
Getty, George F., No. 1 Button, Madera Co.	18-13-16	Rig	rigging up
Twin State Oil Co., No. 1 Soldani, Mendocino	14-12- 7	848	redrilling
Elmer Oil Co., No. 1 County, San Joaquin Co.	6- 3- 9	...	location
Barnhart Trust, No. 1 Oakdale, San Joaquin Co.	3- 2-10	1,545	sd. sh. drilling
White, Roy, No. 1 Pixley, Tulare Co.	8-23-26	1,770	sd. sh. drilling
Terminal Oil Co., No. 1 Tulare, Tulare Co.	29-20-25	1,495	br. sh. drilling

IMPORTANT SOUTHERN CALIFORNIA WILDCATS

Standard, No. 1 Hawthorne, Los Angeles Co.	5- 3-14	7,867	abandoned
Ohio Oil Co., No. 1 Del Ray, Los Angeles Co.	21- 2-15	5,860	hd. sd. drilling
Marblehead Ld. Co., No. 1 Santa Monica, Los Angeles Co.	1- 2-19	218	sd. drilling
Dorn Drlg. Co., No. 1 Bellflower, Los Angeles Co.	21- 3-12	111	sd. drilling
Continental, No. 1 Alamitos, Los Angeles Co.	34- 4-12	Rig	rigging up
Burlingham Pet. Co., No. 1 Compton, Los Angeles Co.	17- 3-13	2,204	suspended
Big Boy Drlg. Co., No. 1 Compton, Los Angeles Co.	22- 3-15	mtl.	building rig
Hanners, George, No. 1 Watts, Los Angeles Co.	8- 3-13	2,149	sd. sh. drilling
Cal. Well Drlg. Co., No. 1 Compton, Los Angeles Co.	11- 4-13	8,500	fishing
Archer Oil Co., No. 1 Watson, Los Angeles Co.	17- 4-13	3,214	hd. sd. drilling
Russell Oil Co., No. 2 Joughin, Los Angeles Co.	23- 3-17	2,300	gr. sh. drilling
Pomona Oil Co., Well No. 1, Los Angeles Co.	32- 1- 8	1,220	cleaning out
Anchor Oil Co., No. 1 Puente, Los Angeles Co.	19- 2-10	4,820	suspended
Rucker, R. C., No. 1 Puente, Los Angeles Co.	27- 2-10	2,290	sd. sh. drilling
The State Co., No. 1 Puente, Los Angeles Co.	5- 2-10	1,116	hd. sd. drilling
Urmi Oil Co., No. 1 Puente, Los Angeles Co.	31- 2- 8	1,078	hd. sd. drilling
Monterey Park, No. 1 Jepson, Los Angeles Co.	25- 1-12	5,300	suspended
Los Gatos Oil Co., No. 1 El Monte, Los Angeles Co.	16- 1-11	1,060	gr. sd. drilling
Union Oil Co., No. 1 Richfield, Los Angeles Co.	13- 3- 9	1,600	hd. sd. drilling
Southwestern Drlg. Co., No. 1 Richfield, Los Angeles Co.	21- 3- 9	5,777	suspended
Superior Oil Co., No. 1 Atwood, Los Angeles Co.	4- 4- 9	4,098	sd. sh. drilling
Coastline, No. 1 Devils Canyon, Los Angeles Co.	21- 5-17	1,310	fishing
Consolidated Oil Co., No. 1 Newhall, Los Angeles Co.	22- 3-16	230	suspended
Anderson, P. B., No. 1 Hasley Canyon, Los Angeles Co.	1- 3-16	688	sd. sh. drilling
Shell, No. 1 Bolsa, Orange Co.	18- 5-11	Rig	rigging up
Shell, No. 1 Coyote, Orange Co.	28- 3-10	6,050	cleaning out
Standard, No. 1 Coyote, Orange Co.	21- 3-10	mtl.	building rig
Beard, G. F., No. 1 Brea Canyon, Orange Co.	30- 2- 9	1,000	suspended
Mesa Pet., No. 1 Newport, Orange Co.	21- 6-10	4,910	plug to 3,914
Western Gulf, No. 5 Newport, Orange Co.	21- 6-10	790	abandoned
Western Gulf, No. 6 Newport, Orange Co.	21- 6-10	511	sd. drilling
Oil Well Eng Co., No. 1 Newport, Orange Co.	21- 6-10	2,806	recemented
Oil Well Eng. Co., No. 2 Newport, Orange Co.	21- 6-10	mtl.	building rig
Hall Pet. Co., No. 1-A Murrietta, Riverside Co.	23- 7- 3	701	cemented
Hemet Pet. Co., No. 1 Ward, Riverside Co.	9- 5- 1	3,403	suspended
Imperial Valley Oil Co., Well No. 1, Imperial Co.	32-11-10	2,980	suspended
Davenport Oil & Gas Co., No. 1 San Marcos, San Diego Co.	30-12- 8	847	suspended
Turner, S. S., No. 1 Escondido, San Diego Co.	25-12- 2	3,005	sd. sh. drilling
Borderland Oil Co., No. 1 Encinitas, San Diego Co.	X-13- 4	1,090	sd. sh. drilling
China American Oil Co., No. 1 Oasis, San Bernardino Co.	17- 4- 4	...	grading

Wildcat in Trinity Shows Production

Another in Dixie Area Extends Producing Area Three-Quarters Mile. West Carroll Parish Well Gives Hope of New Third Gas Field

By D. H. Bancroft
Staff Correspondent, Louisiana-Arkansas

SHREVEPORT, La., Oct. 28.—Wildcats claimed marked attention in this division this week when one of them showed for production from the Trinity in a new locality of Caddo Parish, another extended Dixie district production three-quarters of a mile east and the third was completed as a big gas well. There were two of these latter, in fact; one in West Carroll Parish east of the Monroe Gas Field, and the other in Pope County, Arkansas, 20 miles southeast of the Clarksville district in Johnson County, the first test in the Arkansas River Valley province to be started and finished since the recent lease play in that territory.

Greatest interest, with consequent activity was occasioned by R. W. Norton's No. 1 Hill in the SE SE, Section 33-23-16, Caddo Parish, about 8 miles northeast of nearest production—the western extremity of the Hosston "shoestring." He cored saturated sand, believed by some to be the Trinity and corresponding to the deep stuff in Cotton Valley Ohio Oil Co.'s No. 38 Bodcaw at 4,671-83 feet, and in a few other wells that produced for a while last year. However, the identity of the sand has not been definitely established. Meanwhile Norton has cemented the 9-inch at 2,680 feet and is curing titles, etc., before drilling in and testing. News of the strike was followed immediately by considerable of a lease play east and northeast of the location, Arkansas Natural, Magnolia, Palmer Corp., The Texas Company and Standard Oil Co., being in on it with leases bringing the land owners from $15 to as high as $75 an acre. The development, proof of which is the next big item—with the test of Magnolia Petroleum Co.'s No. 1 McCook & Hibbler, Section 22-21-10, Webster Parish, another Cotton Valley Trinity test that looks like a producer—is the "hottest" in Caddo since the Pine Island deep sand play two years ago and is hoped to be the occasion of a considerable revival in the industry in these parts.

S. T. Onyett and others' No. 1 Dixon SW SW, Section 10-19-14, Caddo Parish, while not yet formally rated a producer, extends Dixie proven area three-quarters of a mile east and has been followed by two other tests farther east. In swabbing the well 10 days ago the hole was sealed off by heavy mud and is just getting open again. It made two heads October 24 and has put two feet of oil into two 500-bbl. tanks while waiting for standard rig. Total depth is 2,444 feet with approximately 2,000 feet of oil in the hole which was deepened after the first test at 2,405 feet.

Other Completions

Beside this well Dixie had four other completions, one of them a wildcat, being a failure. Gulf Refining Co.'s No. 5 Hunter, NE NE, Section 17-19-14, pumped 53 bbls. oil and 75 bbls. salt water from 2,442 feet. Old River Oil Co.'s No. 1 Sibley, a mile southeast of the Onyett completion, in Section 15-19-14, was a dry hole and abandoned at 2,494 feet after shooting with 200 quarts at around 2,450-60 feet whence it stood 150 feet in oil. Ray-Dawes Drilling Co.'s No. 3-A Hunter, NW cor. SE SW, Section 9-19-14, was completed flowing 150 bbls. by heads from 10 feet of broken sand, total depth 2,436 feet, and The Texas Company's No. 4 Hunter, SE SE, Section 8-19-14, flowed 80 bbls. through tubing from 18 feet of broken sand, total depth 2,436 feet. It is interesting to discover what Standard Oil Co.'s No. 2 School, Section 16-19-14, offset north and west by producers, will do. It was dry after a show of oil and gas at 2,441 feet and had drilled to 2,658 feet without further encouraging results.

The Palmer Corp.'s No. 1 Marston, NE SW, Section 12-19-10, West Carroll Parish, finished as a gas well gauging 18,382,000 feet open flow at 1,035 pounds rock pressure, total depth 2,311 feet, revived hopes of a new, third gas field in northeast Louisiana which would be of much assurance to the St. Louis and Birmingham gas line owners. The Palmer Corp. already had completed two gas wells of large proportions in the same vicinity, one of which later went to water, and this well, three-quarters of a mile southwest of the best of the two is a guide to future trend of development as a half dozen tests in other directions haven't given any promise. They were all dry. Top of the Monroe gas rock was hit at 2,302 feet. Until pipe line outlets become available, connections with the Birmingham and St. Louis lines, both wells are shut in.

The Arkansas Valley excitement was renewed by Arkansas-Louisiana Pipe Line Co.'s No. 1 McFaddin, SE NW, Section 15-9-21, Pope County, blowing in with an estimated 30,000,000 to 40,000,000 feet of gas from a total depth of 1,051 feet. It ran wild for a day or two but was finally shut in. The danger is that it may blow out around the casing as there is only 390 feet of 12½-inch pipe in the hole. It apparently opens an entirely new gas "pool" if a gas area may be called that. It is on one of the structures mapped by and shown in the Arkansas Geological Survey's map, published this week, as the result of two years' work in which the U.S.G.S. collaborated. It is 20 miles southeast of Clarksville production and no doubt will serve to give more emphasis to the possibilities of the area. The first result is location by Cosden Oil & Gas Co. for No. 1 Missouri Pacific R.R., NW SE, Section 13-9-9, Van Buren County, approximately 35 miles east. More probably, this location is not a reaction to the Arkansas' well as Cosden has had this block among others in the Arkansas Valley, for several months and it has been rumored for several weeks that it was getting ready to drill in the eastern end of the Valley play.

Sarepta District

There is some development on the Bossier-Webster line in the Sarepta district that has recreated some attention. It consists in deepening a couple of wells completed two or three years ago as gassers in the Cartersville horizon to the same stuff that gave Lloyd Harris, while Homer was fading out, two or three wells which, while not immediately profitable, directed attention to their vicinity and led to development of Sarepta as a gas field. Delaware-Louisiana Development Co.'s No. 4 Bollinger, Section 38-23-11, a second completion at 3,922 feet, flowing 100 bls. by heads six weeks ago, was followed this week by the same interests' Sales & Walker No. 1 Kilgore, Section 31-23-11 making heads from 3,155 feet, corrected depth, of high grade oil. It made 180 bbls. the first 24 hours from 3 feet of sand and was scheduled to have tubing set at the time this is written to discover whether it wouldn't flow. It, with the previous well, is a case in point of what is happening in Smackover, reworking old wells, either plugging back and perforating to test a shallower sand, or deepening to test a lower one.

Elsewhere in Bossier there were four completions. H. L. Morgan made a 6,000,000-foot gasser 775 pounds rock pressure, of No. 1 Wetherbee, SW SE, Sec-

(Continued on Page 118)

LOUISIANA-ARKANSAS PROVEN AREAS

NORTH LOUISIANA

BOSSIER PARISH—CARTERVILLE

Company, farm and location—	Remarks:
Sales & Walker's No. 1 Kilgore, 325 ft. W, 200 ft. N, SE cor. NW NE, Sec. 31-23-11	Bailing to test 3 ft. sand, showing oil and S.W; T.D. 3,155 ft; S.L.M.

BOSSIER PARISH—ELM GROVE

Palmer Corp.'s No. 14-B Hodges, C E½ SW, Sec. 24-17-12. 24-17-12	Cmtd. 6-in. 1,859 ft.
Palmer Corp.'s No. 1-A J. A. McDade, 2,310 ft. W, 660 ft. N, SE cor., Sec. 12-17-12	Rigging up.

CADDO PARISH—GREENWOOD

Calatex O. & G. Co.'s No. 1-A Agurs, 819 ft. S, 157 ft. E, NW cor. SW, Sec. 7-16-16	Began drlg. Oct. 19; cmtd. 10-in. 142 ft.; drlg 340 ft.
Eastern Carbon Co.'s No. 1 Z. Abney, Sec. 8-17-16	Cmtd. 10-in. 100 ft.; drlg. 750 ft.

CADDO PARISH—HOSSTON

Bayou State Oil Corp.'s No. 18 Levee Board, 450 ft. N, 150 ft. E, SW cor. NW, Sec. 23-22-15	Began drlg. Oct. 19; cmtd. 10-in. 42 ft.; drlg. 620 ft.

CADDO PARISH—MOORINGSPORT

C. B. Moore's No. 1 Buckalew, 2,000 ft. N, 1,000 ft. W, SE cor., Sec. 30-20-15	W.O.S.R. 200 ft. oil in hole.; T. D. 2,304 ft.

CADDO PARISH—DIXIE

T. C. Adams et als' No. 1 Dickson, 990 ft. E, 330 ft. N, SW cor. NW, Sec. 10-19-14	Began drlg. Oct. 20; cmtd. 10-in. 103 ft.; drlg 800 ft.
Eylers Oil & Gas Co.'s No. 1 Sentell, SW cor. NE, Sec. 9-19-14	Began drlg. Oct. 18; cmtd. 10-in. 108 ft.; drlg 900 ft.
Fitzsimmons Drlg. Co.'s No. 1 Sentell, C W½ NW SW SW, Sec. 10-19-14	Rigging up.
Sam Gold's No. 3 Hunter, 660 ft. N, 660 ft. W, SE cor. SW NE, Sec. 17-19-14	Cmtd. 6-in. 2,396 ft.; T.D. 2,410 ft.
Ohio Oil Co.'s No. 4 Hunter, 330 ft. N and W, SE cor. NW NE, Sec. 17-19-14	Derrick.
Ohio Oil Co.'s No. 6 Hunter, 330 ft. S, 330 ft. W, NE cor. NW NE, Sec. 17-19-14	Cored S.W. sand; S.D; W.O; T.D. 2,482 ft.
Ray-Dawes Drlg. Co.'s No. 4-A Hunter, Sec. 9-19-14	Began drlg. Oct. 18; cmtd. 10-in. 102 ft.; 6⅝-in. 2,386 ft.
Standard Oil Co.'s No. 8 Hunter, Sec. 17-19-14	Location.
Standard Oil Co.'s No. 3 Henderson, 220 ft. N. 330 ft. W, SE cor. SW SE, Sec. 7-19-14	Began drlg. Oct. 19; cmtd. 10-in. 97 ft.; drlg 1,300 ft.
Standard Oil Co.'s No. 9 Hunter, 330 ft. N, 330 ft. W, SE cor. SW SE, Sec. 8-19-14	Tested small show oil bailed dry; T.D. 2,435 ft.

(Continued on Page 113)

WILDCAT OPERATIONS IN LOUISIANA-ARKANSAS

NORTH LOUISIANA

BOSSIER PARISH

Company, farm and location—	Remarks:
Corbett et als' No. 1 Murff, SE cor. NE, Sec. 18-17-11	S. D. 990 ft.
Sam Gold's No. 1 McFarlin, SE cor. SW SW Sec. 7-19-13	Location.
Neil & Lanier's No. 1 Biedenharn, SE cor., Sec. 23-21-14	Bailing to test 1 ft. sand.; T.D. 1,015 ft.
G. D. Nesbit's No. 1 Burt, Sec. 20-19-13	Location.
Walker et als' No. 1 Antrim, NW cor. SE, Sec. 28-23-13	S.D. 3,021 ft.; made 57 ft. more hole;tested small show oil; drlg. shale 3,175 ft.
Woodmansee et als' No. 1 Bollinger, SE cor. NE, Sec. 9-22-11	S.D. waiting orders 3,532 ft.

CADDO PARISH

D. C. R. Oil Co.'s No. 2 Oden, 892 ft. W, 264 ft. S, NE cor. NE NW, Sec. 20-19-14	S.O.; tested dry 3,445 ft.; S.D.; W O. 2,550 ft.
Haynes Bros.' No. 1 Oden, 1,650 ft. S., 330 ft. W, NE cor., Sec. 20-19-14	Cored sand showing S.W. 2,471 ft; S.D; W.O. 2,505 ft; may make deep test.
Lide et als' No. 1 Hunter, 300 ft. S, 200 ft. E, NW cor., Sec. 22-19-14	Cleaning out to reset liner and test 5½ ft. sand; T.D. 2,468 ft.
Lide et als' No. 1 Levee Board, 200 ft. S, 200 ft. W, NE cor., Sec. 24-19-15	Did not test at 2,405 ft., arranging D.S. test 2,410 ft.
R. W. Norton's No. 1 Hill, 630 ft. N, 1,260 ft. W, SE cor. NE, Sec. 22-22-16	Cmtd. 9-in. 3,680 ft; T.D. 3,701 ft; 16 ft. swb. sand.
S. T. Oynett, trustee's No. 1 Dixon, SW cor., Sec. 10-19-14,	W.O.S.R; 1,000 ft. oil; T.D. 2,444 ft.
I. N. Pharis, trustee's No. 1 Oden, NE cor. SE NE, Sec. 16-19-14	Coring 2,320 ft.
Standard Oil Co.'s No. 2 School Land, 330 ft. S, 330 ft. E, NW cor., Sec. 16-19-14	Tested dry; show oil and gas 2,441 ft; S. D. 2,654.
Planters Oil Co.'s No. 1 Pittman, 200 ft. S, 200 ft. E, NW cor. NE, Sec. 23-19-14	Drlg. 2,200 ft.

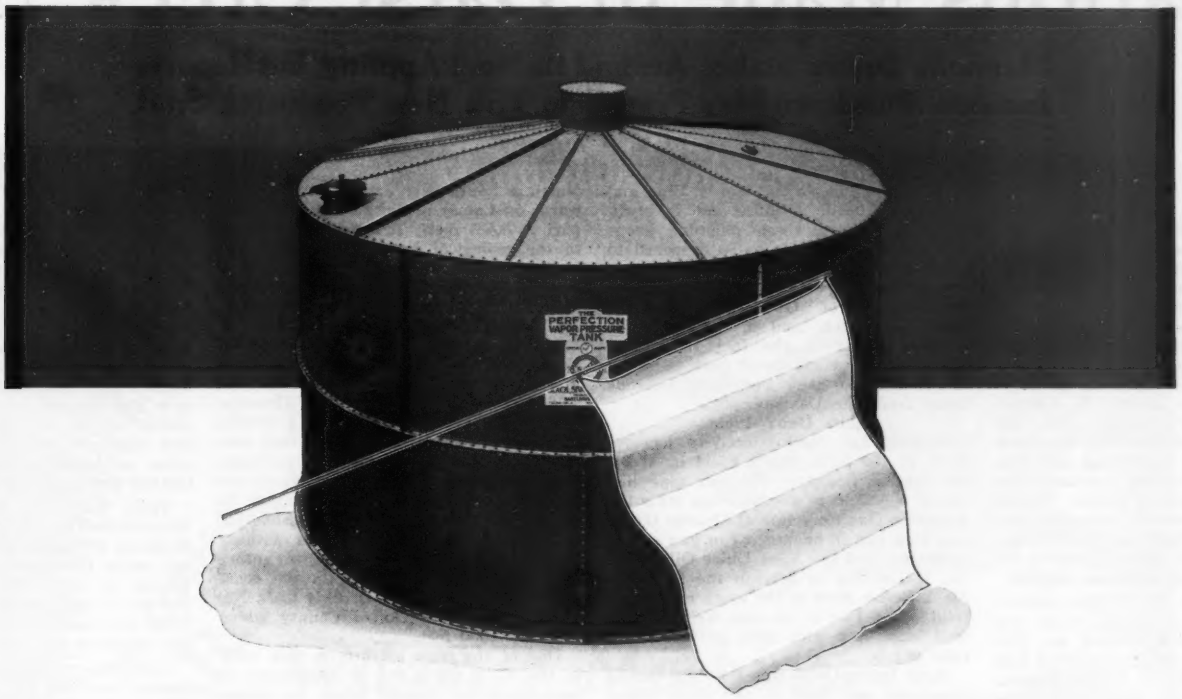
CATAHOULA PARISH

Lochnager Pet. Co.'s No. 1 Taliaferro, 572 ft. E. 396 ft. S, C, Sec. 26-9-6	S.D. 900 ft.

CLAIBORNE PARISH

El Dorado Chief Oil Co.'s No. 1 Dance, C SW NE, Sec. 27-20-7	Drlg. 2,053 ft.
Leue Oil Co.'s No. 1 Taylor, Sec. 16-22-6	Derrick.
Triangle Drlg. Co.'s No. 1 Kilpatrick, 660 ft. S, 660 ft. E, NW cor. SW NE, Sec. 7-19-5	Cmtd. 15½-in. 496 ft; drlg. 1,350 ft.

(Continued on Page 102)



When the White Flag Flies—

Is Your Oil at Well Head Gravity?

When you put up the white flag is your oil as rich in gravity as it was when it came from the well? And when it is gauged, will it be graded the same as it would have been when it first flowed into the tank?

Do not lose sight of the fact that as the sun shines, the gasoline and other lighter fractions are driven off the oil in the form of gas or vapor. If these vapors can escape from the tank they are lost in the air — *sometimes five barrels in twenty-four hours in a 250-barrel tank.*

But that is not the only loss! The gravity may be lowered by the heat, through the loss of rich vapors, so that the entire production falls below the premium earning point.

Protect your oil then against this double loss, and know that when the white flag flies, you have 100% oil to sell and it's 100% of the same gravity, as it was when it came from the well. Complete protection, therefore, in—

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It will pay you—not merely in theory—but in actual fact, to thoroughly investigate these tanks. They are used by some of the largest Oil Producing Companies in America and are purchased in units both large and small. In this day of efficiency and when every dollar saved means that much more made, the B.S.&B. Tanks fill the bill to a nicety and insure the producer against loss of oil or gravity.

Besides the tanks, there is a quick and complete service awaiting you! 50 field stations—hundreds of trucks—scores of experienced tank crews are available to install your tanks on but a brief notice. "SERVICE ON THE DOT—SERVICE ON THE SPOT!" A summons will prove it!

We await your summons—by telegraph—telephone—letter, or request to a salesman. Let us prove the PERFECTION of these tanks, and the B.S.&B. Service. Would you like more information? Address Dept. B-5.

EFFICIENT B S & B SERVICE DEPENDABLE

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BARTLESVILLE - OKLAHOMA

Locations Made in Darst Creek Area

Magnolia Drives Stakes Around Its No. 1 Appling, but Reports Indicate Shutdown May Prevail in This New Producing Spot

By B. D. Stevenson
Staff Correspondent, Southwest Texas Fields

SAN ANTONIO, Tex., Oct. 28.—Magnolia Petroleum Co. made a bunch of locations in the last week around its No. 1 Appling in the Darst Creek area in Guadalupe County, one of them on the C. Zedler tract a half mile south and one on the Rand Miller tract in the western point of the Jerome B. Alexander Survey; but the understanding was later that there might be no drilling and that the shutdown prevailing around The Texas Company's No. 1 Dallas Wilson would prevail also around this new producing spot in the Darst Creek territory. However, there were also movements indicating that drilling might be started.

The Darst Creek Field now consists of four producing wells and three dry holes. Two producers drilled by The Texas Company are offsets including The Texas Company's No. 1 Dallas Wilson, the discovery well and The Texas Company's No. 1 Lemmie Andereon, a north offset to it. Six miles northeast is the R. R. Penn No. 1 Manford, a producer, offset by two dry holes. Between them, 1½ miles southwest of the R. R. Penn No. 1 Manford and 4½ miles northeast of The Texas Company's No. 1 Dallas Wilson, is the Magnolia Petroleum Co.'s No.1 R. C. Appling reported in last week and gauging at the rate of about 4,000 bbls. a day. The third dry hole was drilled by Cranfill & Reynolds a half mile north of The Texas Company's No. 1 Dallas Wilson.

Cranfill & Reynolds have made a location for their No. 1 R. C. Appling one location due west of the Magnolia Petroleum Co.'s No. 1 R. C. Appling—Magnolia has made location for its No. 1 L. V. Echols one location due south of its No. 1 R. C. Appling and a location for the No. 1 C. Zedler a half mile south of No. 1 R. C. Appling. It has made a location for the No. 1 Rand Miller, 2 miles southwest and exactly half way between the No. 1 R. C. Appling and The Texas Company's No. 1 Dallas Wilson.

Permanent Shutdown Not Expected

Evidently the Darst Creek area will not remain shut down permanently for The Texas Company is laying a pipe line from Sullivan Switch on the Southern Pacific to a connection with its main line from West Texas to Port Arthur. Soon after it brought in the No. 1 Dallas Wilson in the Jacob Darst Survey it laid a 10-mile line from the well to Sullivan Switch. The distance from Sullivan Switch to the connection with the West Texas line at Rosanky in Bastrop County is approximately 40 miles and it would hardly lay that much line unless it expected to run oil through it.

Tests that have been watched with interest in Guadalupe County outside of the Darst Creek structure include the T. H. Poole (Eugene Sights) No. 1 Behring, which topped the Edwards lime at 2,342 with an elevation of 443 feet and reached a total depth of 2,350 and tested sulphur water. It had looked pretty favorable for a time. It may be drilled deeper. Even with sulphur water the operators believe they have proved a structure and that another location would get oil production.

Over to the east in Gonzales County the Empire Gas & Fuel Co.'s No. 1 Norwood is rigging up to deepen. This test opened a new producing spot, but offsets resulted in dry holes. The well was brought in last December and from 30 feet in the Austin chalk, produced at the rate of 425 bbls. a day for a time and then went dead. Cleaned out it again produced and has been pumping about 100 bbls. daily. It is to be deepened to the Edwards lime.

Grayburg Oil Co.'s No. 1 Wells in the eastern part of Guadalupe County is down 2,905 feet and in shale. It is watched owing to the fact that it is almost on a line southwest from the acreage which the Shell Petroleum Co. has taken from the Denmanns.

Agua Dulce Field

Drilling and leasing activity has revived in the Agua Dulce Field in Western Nueces County. The gas pipe line out of the field to a connection with the Magnolia Gas Co.'s line at Orange Grove has been put in shape to run gas and is operating, and the Agua Dulce Oil & Gas Co. is starting to develop the field. Its No. 2 Bessie Kerr in the south end of the field looks like a big gas well from a drill stem test with sand at 2,032 feet total depth.

Agua Dulce Oil & Gas Co. now has 12 completed gas wells in the Agua Dulce Field and has been pulling about 30,000,000 feet daily from these wells. Rigs are up for drilling several others. The gas is delivered to the Houston Gulf Gas Co. The formations have run somewhat different in the Agua Dulce Oil & Gas Co.'s No. 2 Bessie Kerr and the other wells of the field and for a time the test looked a little unfavorable at around 2,000 feet where the other wells are producing.

Cores at the bottom of the hole in the No. 12 Bessie Kerr had the odor and more of the appearance of oil than anything else drilled in the field and the bringing in of the well therefore will be watched with interest. It is just a little deeper than other producers in the field. The No. 2 is the most southerly location in the field. John G. Morris, one of the chief owners of the Agua Dulce Oil & Gas Co. has been taking on additional blocks of acreage in the field and especially to the south of production.

One of the features of the Gulf Coast country around Corpus Christi the past week was the abandonment of the United North & South Oil Co.'s No. 1 Kate Edwards on Lamar peninsula north of Rockport at 5,587 feet. It added a great deal to the geological knowledge of the peninsula, but no production. There is a possibility that the company will drill another test on the peninsula, however.

Deep Holes Abandoned

Magnolia Petroleum Co. abandoned its No. 1 Cook in the northern part of Jim Wells County, a pure wildcat at 4.780 feet the past week, and Houston Gulf Gas Co. abandoned its No. 1 Welder in San Patricio at below 5,000 feet, also a wildcat. It was a week of abandoning deep holes. Over in Maverick County the Ryan Consolidated Oil Co. abandoned its No. 2 Indio at 5,661 feet after shooting it at 3,300 feet with 60 quarts without any beneficial results. The only other mile deep test left drilling in the coast country is the Mission Drilling Co.'s No. 3 Ray in western Goliad County which is down 5,660 feet.

One of the tests of interest this week is the F. P. Zoch No. 1 Kaufmann in western Goliad County which set casing and was to bail and test Monday of this week at 2,938 feet, which is practically the same depth as in the Mission Drilling Co.'s No. 2 Ray, a producing gas well a few miles west in Bee County. It set 8¼-inch casing at 2,913 feet.

Two new deep tests are to start in Live Oak County, each scheduled to go about 4.000 feet and they will be interesting because they are the first to attempt that depth in the county. Simmons Oil Co. (Henderson Coquat) will drill on the Richard Coquat land in the James C. Hill Survey a little north of Oakville and O'Neill & Catlett will drill one on the Chicago Cattle Land Co.'s ranch a few miles north of the Cartwright gas field where gas production is had at 2,100 feet.

In the Cartwright Field the Houseon Oil Co. which owns the entire field has set 10-inch casing at 1,546 feet in its No. 2 J. B. Dunning in the M. B. Kilvin Survey. A drill stem test indicated that it would likely make as big a well at that depth, which is about 600 feet shallower than the producing sand. The first sand opened in that field was at about 800 feet and resulted in an enormous blow-out and a crater.

Laredo District

There were four completions in the Laredo district the past week. Co-Operative Drilling Co. completed its No. 3 Dinn in Survey 454 in Duval County for 40,000,000 feet of gas at 1,776 feet, total depth. It is north of the Cole gas field and Humble Oil & Refining Co. completed its No. 36 Kohler in the northeast corner of Survey 424 and located 3 miles north of the No. 3 Dinn for 15,000,000 feet of gas at 1,814 feet.

There were two completions in the Schoolfield-O'Byrne Pool, both by the Magnolia Petroleum Co. The No. 1 Lundell made 15,000,000 feet of gas and is located on the west side of the field. The No. 9 Hahl made 75 bbls. of oil at 2,328 feet and is located in block 24 in the center of the field.

There was only one abandonment in the Laredo territory last week U. S. Gas & Oil Co. No. 1 Kelsey in Starr County, which has been standing at 80 feet for several months, was temporarily abandoned.

Branyon	24
Bruner	36,699
Dale	525
Darst Creek	1,916
Kingsville	554
Larremore	159
Luling	10,540
Lyton Springs	950
McMullen County	43
Medina County	15
Mirando	9,835
Somerset	1,754
Yoast	1,239
Total	64,253
Week ending October 19	64,634
Decrease	381

Buchanan Pool—Caldwell County

Neumann & Speer's No. 1 McConnell, 900 feet southwest of Texas Company's No. 1 Cude, drilling at 1,000 feet.

Joe Bruner Field—Caldwell County

Humble Oil & Refining Co.'s No. A-5 M. Briscoe, J. Hinds Survey. 206 feet to north line, 485 feet to west line, drilling in lime at 2,477 feet; Humble Oil & Refining Co.'s No. C-9 Floy Gray, J. Hinds Survey. 150 feet to north line, 350 feet to east line, drilling in shale at 500 feet; Humble Oil & Refining Co. and Luling Oil & Gas Co. No. A-7 Johnson, J. Hinds Survey, 593 feet to south line, 650 feet to west line, drilling in shale at 400 feet.

Darst Creek—Guadalupe County

Gulf Production Co.'s No. 1 C. Anderson, J. C. Darst Survey, 150 feet to south and east lines, location; No. 1 Tadlock, Jacob Darst Survey, 150 feet out of NE cor., location. The Texas Company's No. 2 Dallas Wilson, Jacob Darst Survey, 150 feet to south and west lines, location; No. 2 Lemmie Anderson, same survey, 150 feet out of NE cor., standing at 685 feet; No. 3 Lemmie Anderson, same survey, 150 feet to north and west lines, location; No. 4 Lemmie Anderson, location. H. H. Weinert's No. 1 A. E. Dowdy, Jacob Darst Survey, 100 feet to south line. 36 feet to east line, location; No. 2 A. E. Dowdy, Jacob Darst Survey, 100 feet to north line, 36 feet to east line, location.

Kingsville Pool—Kleberg County

Humble Oil & Refining Co.'s No. 8 R. J. Kleberg, K.T.&I. Co. Survey, 150 feet to south and east lines of Lot 7, Section 40, location.

Cartwright Pool—Live Oak County

Houston Oil Co.'s No. 2 J. B. Dunning, in M. B. Kilvin Survey, 1,445 feet north of No. 1 J. B. Dunning, set 10-inch

(Continued on Page 117)

WILDCAT OPERATIONS IN SOUTHWEST TEXAS

Week Ended October 26.

ARANSAS COUNTY

United North & South Dev. Co.'s No. 1 Kate Edwards, Lewis Sur. ..... Abandoned dry 5,587 ft.

BASTROP COUNTY

Hadley Oil Co.'s No. 1 F. Kiel, R. H. Grimes Sur., 150 ft. E line, 1,000 ft. S line ..... Drlg. 3,400 ft.
E. W. Ogden's No. 1 Goodman ..... Standing 2,540 ft.
Pacific Oil & Gas Co.'s No. 1 Darnell & Bickler, Martha Baker Sur. ..... Abandoned dry 2,627 ft.
Superior Oil Co.'s No. A-1 W. D. Ramsey, G. T. Glasscock Sur., 150 ft. to NW line, 840 ft. to SW line .... Location.

BEE COUNTY

Houston Oil Co.'s No. 1 McKinney, L. C. Randolph Sur. ..... Coring sand 1,747 ft.
Mission Drilling Co.'s No. 4 Ray in Geor. S. Kerr Survey .. Drlg. 3,725 ft. in shale.
Nichols et al's No. 2 Knobs in Jose Maria Uranga Survey, 600 feet to N. line, 2,000 feet to W. line ..... Run. liner to test sand 1,920 ft.

BEXAR COUNTY

Guy S. Fisher's No. 1 S. L. Beck, P. W. Hays Sur. ..... Drlg. 750 ft.; setting casing.
F. H. Eckert's No. 1 Sandemer, Sur. 52 ..... Drlg. 540 ft.
Penn-Tex Oil Co.'s No. 1 Kate May, F. R Desauge Sur. No. 134 ..... Drlg. 1,410 ft.
Moore-Jauer's No. 1 Holly R. Ellison ..... Underreaming to set casing at 1,720 ft.
Leon Oil Co.'s No. 1 Reiniger, 300 ft. E line, 215 ft. S line ..... Drlg. 1,555 ft.
E. G. Potter's No. 1 Watson, B. Martinez Sur. ..... Reset casing at 1,995 ft. Waiting on cement; total depth 2,509 ft.
W. C. Sutherland's No. 1 J. Halberdier, Survey 57, located 150 E of Cen of W. line ..... Location.

BLANCO COUNTY

Ashe & Marshall's No. 1, 5 mi. S Johnson City ..... Rigging up.

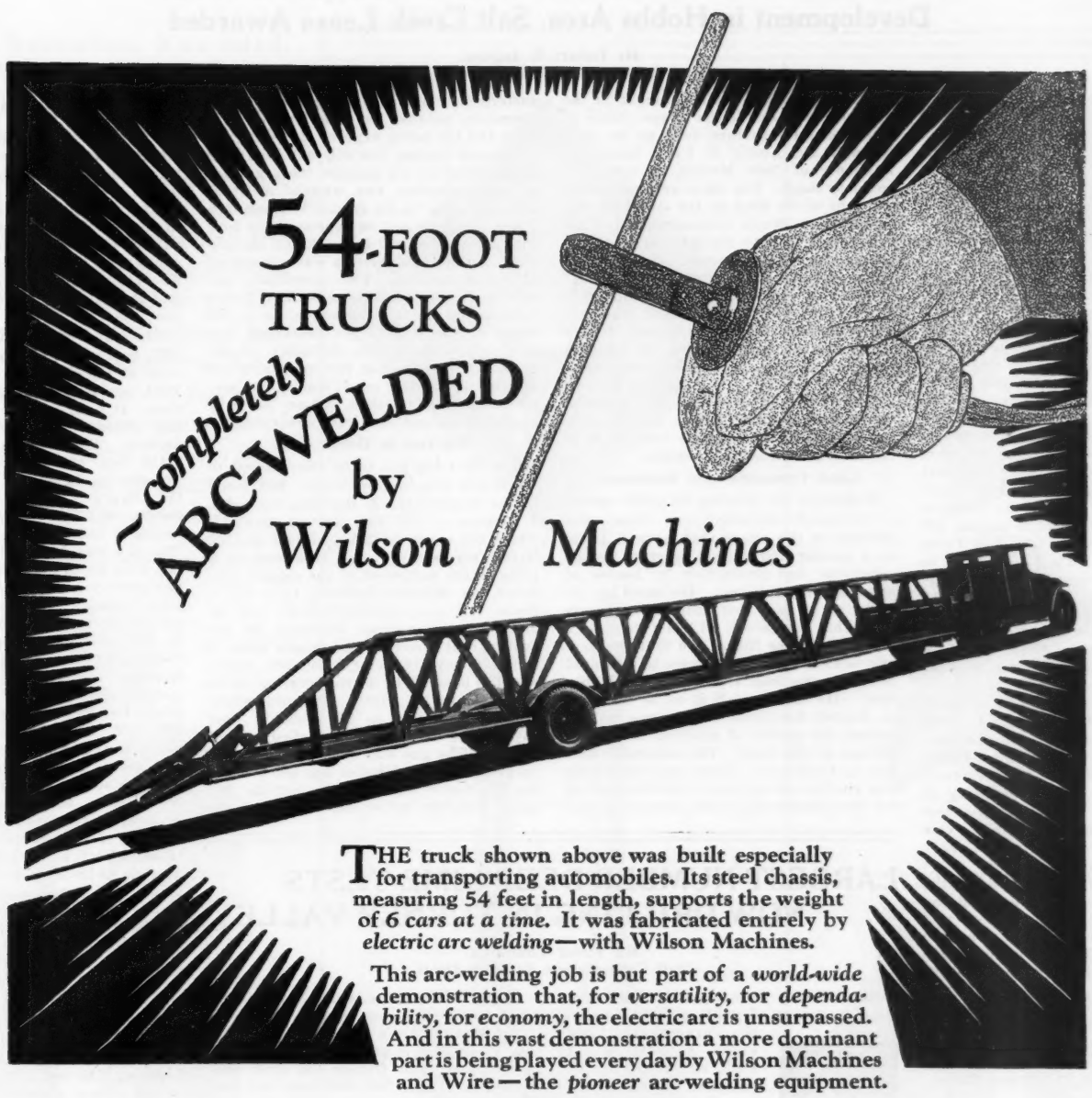
BROOKS COUNTY

W. R. French's No. 7 R. Allen, Blk. 20, 1,320 ft. N and W lines ..... Drlg. 700 ft. (core test).
Houston Oil Co.'s No. 1 Holbien-Wormser in Palo Blanco de Magnellos Sur., 660 ft. S of company's No. 1 Lasater ..... Moving in.

CALDWELL COUNTY

Morgan Bros.' No. 1 C. Malone, A. Floyd Sur. ..... Derrick.
Joe Bruner's No. 1 Neil, S. Morris Sur., 400 ft. NE and NW lines ..... Location.

(Continued on Page 113)



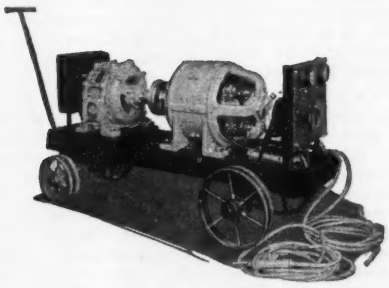
THE truck shown above was built especially for transporting automobiles. Its steel chassis, measuring 54 feet in length, supports the weight of 6 *cars at a time.* It was fabricated entirely by *electric arc welding*—with Wilson Machines.

This arc-welding job is but part of a *world-wide* demonstration that, for *versatility*, for *dependability*, for *economy*, the electric arc is unsurpassed. And in this vast demonstration a more dominant part is being played every day by Wilson Machines and Wire — the *pioneer* arc-welding equipment.

No matter what your industry—no matter what your metal-joining problem—you can minimize risks and save money by welding with the electric arc. And you can assure yourself the *maximum* advantages of electric arc welding by using Wilson Machines and Wire—known in practically every industry and in 44 nations for their strong, permanent and homogeneous welds.

You are invited to consult Wilson Engineers.

WILSON WELDER & METALS CO. INC., 18 WILSON BUILDING, HOBOKEN, N. J.



The Wilson Model S Welding Machine shown above is the Type 200 Amperes, one-operator, electric-motor-driven outfit.

WILSON

WELDING MACHINES AND WELDING WIRE

Opposes Curtailment in New Mexico

Land Commissioner Crile Favors Systematic and Orderly Development in Hobbs Area. Salt Creek Lease Awarded

By Tolbert R. Ingram
Staff Correspondent, Rocky Mountain Area

DENVER, Colo., Oct. 28.—A meeting of operators holding leases and permits in the Hobbs district in Lea County, New Mexico, was held at Roswell on October 22 to discuss plans for curtailing drilling and production in the new pool, but no decision was reached. Dr. A. D. Crile, state land commissioner, took a stand in favor of systematic and orderly development and was opposed to a shutdown. The State owns 40 per cent of the land in the area. The Humble Oil & Refining Co.'s No. 1 Bowers, 3 miles northwest of production in the Hobbs Pool, cut a horizon making 50,000,000 feet of gas which indicates that the structure trends to the north and west and that gushers are probable in the new pool. The Ohio Co.'s No. 1 State, marking another extension of the pool is making 100 bbls. a day while drilling in. The Texas Pacific Coal & Oil Co.'s No. 2 State in the Ochoa district, came in as a flowing well at 3,705-12 feet and made 256 bbls. in 24 hours. It will be drilled deeper.

The Utah Oil Refining Co.'s test in Kane County, southern Utah, in which several companies are interested, is about ready to commence drilling.

The Mountain Fuel Supply Co. is starting five wells in northern Moffat County, Colorado, of which two are on the Bartram Dome, two on the Hiawatha Dome, and one on the Powder Wash structure. The first shipment of oil, consisting of two tank cars, was made from the new Berthoud Pool in Larimer County. One well was abandoned in Fremont County and another in Montrose County.

The lease on Section 36-40-79, in the Salt Creek Field, in Wyoming, and the contract to purchase the royalty oil was awarded to the Midwest Oil Co. by the State land board. The Wyoming Associated completed a Sundance sand well in Salt Creek making 1,988 bbls. initial. A 100-bbl. well was completed in the La Barge Field and a deeper pay has been found on the Hamilton Dome in Hot Springs County. The Ohio Oil Co. is drilling in a producer at Oregon Basin.

NEW MEXICO

A meeting of operators in the Hobbs district in Lea County, New Mexico, representatives of the New Mexico State Land Board, and others, was held at Roswell, on October 22, to discuss plans for curtailing production in the new pool and preventing an excessive drilling campaign in the face of the present conditions. No definite decision was reached. The situation in New Mexico is in some respects different from what it is in West Texas. There are five producing wells in the Hobbs Pool and the present capacity of these wells is around 2,000 bbls. a day. A number of location have been made and the prospects are favorable for considerable offset drilling if some agreement is not reached. The crux of the situation at present lies in the fact that the pool is isolated, has no pipe lines to any market and is 50 miles from the nearest railroad point. If extensive offset drilling is undertaken, expensive storage will have to be erected, or pipe lines constructed. The Humble Oil & Refining Co. has a line from Winkler County up to the Jal district, 50 miles south of the Hobbs area, and the Texas Pipe Line Co. has a line to the San Simion district 25 miles southwest of the new pool. Neither of these companies has indicated any desire to build into the area and take the oil, in fact, they have shown a disposition to refrain from taking such a step. The Midwest Refining Co., which brought in the discovery well and is the largest owner of leases on the structure, took up the matter with Dr. Austin D. Crile, land commissioner of New Mexico, to see what could be done. The state owns about 40 per cent of the land on the structure and is, therefore, deeply interested. Dr. Crile is reported to have replied that he would like to know the attitude of the other operators, and as a result the conference at Roswell was called. The Prairie Oil & Gas Co., which owns offset leases to the Midwest's No. 24 Leech well, took a leading part, it is reported, in bringing the operators together. That company is said to be desirous of not drilling the offsets if it can be avoided. The Midwest has shut in its Leech well, but is erecting an 80,000-bbl.. storage tank to have the storage available if needed.

Land Commissioner's Statement

Following the meeting Dr. Crile issued a statement, according to press dispatches to the effect that he will insist on a regular and orderly program for development and production by lessees of state land in that area. He based his position on th fact that there is no assurance that crude oil will not be worth much less in the future and that the common schools of the state were in dire need of the income from royalties in the Hobbs area. He said he felt it to be his duty as trustee for those institutions not to hazard the results of shutting down production at this time. The increasing output in California, Texas and Oklahoma was cited as an argument against singling out the recently dscovered pools in southeastern New Mexico for curtailment. The operators pointed out the lack of pipe lines and the heavy expense of drilling the wells and storing the oil, but Dr. Crile replied that in his opinion the argument of overproduction was without merit at this time, due to the relatively small output of the state and he expressed the hope that a pipe line will be built into the district. No definite decision was announced after the meeting. The operators are said to be sympathetic with Dr. Crile's explanation of the situation as far as the needs of the schools are concerned, but this only adds to the difficulty of the problem since most of the companies are affected by general conditions in the several oil producing states and are faced by a general instead of a local situation.

Big Gas in Hobbs Area

The first big gas to be encountered in the Hobbs area in Lea County, was found in the Humble Oil & Refining Co.'s No. 1 Bowers, C NE SE, Section 30-18-38, which cut a pay at 3,684-87 feet making 50,000,000 feet of gas. This well is 3 miles to the northwest of the nearest producer, the Midwest Refining Co.'s No. 1 State, NE cor., Section 9-19-38, and indicated an important extension of the pool in that direction last month when it struck a pay streak at 3,368 feet which put 438 bbls. of 42 degrees gravity oil in the tank in 24 hours. The production dropped, however, to 372 bbls. in four days before the tubing was pulled to drill deeper. The gas was encountered at approximately 9 feet below sea level, while the Midwest's No. 31 Capps got the pay about 428 feet below sea level, and the Walker Oil Corp.'s No. 1 Terry at 562 feet below sea level. This indicates that the Humble well is much higher on the structure and that the pool is going to be a more important factor than was expected a week or two ago. At that time comparatively little gas had been found in any of the wells and it was not expected that big gushers would be encountered similar to those found in West Texas. The Humble well is to be drilled deeper and the situation may undergo an important change.

The Ohio Oil Co.'s No. 1 State, NE SE SW, Section 9-19-38, a mile to the southwest of the discovery well in the Hobbs Pool, probably will be the next completion. It is drilling in lime at 4,190 feet and producing 100 bbls. per day while drilling. There was a show of water at 4,155 feet but it was exhausted after bringing up 11 bailers full. The Walker Oil Corp.'s No. 1 Terry, NW SW SE, Section 10-19-38, has been pinched in and averaged 313 bbls. a day the past week. The pay was found at 4,150-84 feet and the total depth is 4,184 feet. The principal activity is around this well. The Midwest Refining Co.'s No. 24 State, an offset on the west, is drilling at 1,130 feet in red rock and shale, and its No. 13 Terry, SE NE SW, Section 10-19-38, one location north of No. 24 State, commenced spudding on October 16. The Shell Petroleum Corp.'s No. 1 Thorpe, SW NW SE, Section 10, one location north of the Walker well, is spudding at 150 feet. The Walker Corp.'s No. 2 Terry, one location to the south of its No. 1 Terry, has not yet spudded, and it is possible the company will await the outcome of the conference. The Shell Petroleum Corp.'s No. 1 McKinley, SW cor. Section 19-18-38, is a location. This well has been spotted approximately a mile to the northwest of the Humble well. The Shell's No. 1 Terry, SE SW NE, Section 22-19-38, cemented the 8¼-inch at 3,361 feet and is waiting. Cecil Bordages' No. 1 Hughes, C S half Section 27-19-38, which is resuming at a total depth of 4,012 feet, is bailing water.

Ochoa District

The Texas Pacific Coal & Oil Co.'s No. 2 State, NW cor. SW, Section 21-23-36, in the Ochoa district, north of the Jal Pool, in Lea County, furnished some interesting developments when it cut a pay at 3,705-12 feet and commenced flowing by heads. It made a flow about every 3 hours and puts between 30 and 40 bbls. into the tank at each head. On October 13 it made 256 bbls. in 24 hours and the next day it made 230 bbls. The oil tested 28.9 degrees. A pumping test will be made before drilling deeper. This well is 1¼ miles west and one-fourth of a mile north of this company's No. 1 State, SE cor. SW, Section 22-23-36, which was completed as a 15,000,000-foot gas well last June at 3,668 feet after plugging back from 3,995 feet to shut off water. The Continental Oil Co. drilled its No. 1 Danciger, SW cor. Section 7-23-36, 2½ miles to the northwest last year and abandoned it at 4,035 feet in water.

In the San Simion district in Lea County, several of the wells around Cranfill & Reynolds' No. 1-B State are getting under way. This firm's No. 2-B State, NW cor. Lot 9, Section 2-21-33, an offset on the west to their producer, is drilling at 795 feet, and their No. 3-B State, SW cor. Lot 9, one location to the south of their No. 2-B State, is spudding at 150 feet. The Amerada Petroleum Corp.'s No. 1 State, SW cor. Lot 7, Section 1-21-33, is drilling at 460 feet in red rock, and Snowden & McSweeny's No. 1 State, NW cor. SW, Section 1-21-33m, is rig-

(Continued on Page 120)

LARGEST NUMBER DEEP LIME TESTS NOW DRILLING IN TURNER VALLEY

By Victor Lauriston
Staff Correspondent, Canadian Fields

CHATHAM, Ontario, Oct. 26. — The latest summary of drilling operations in the Turner Valley Field shows a total of 11 wells either drilling or cemented in the Madison limestone. This is the highest number of deep lime tests to drill simultaneously in the history of the field. Definite results from most of these should be forthcoming before the end of November, and practically all should be finished by the end of the year.

Among the Imperial Oil tests, Northwest Associated's No. 1, LSD 6, Section 20-19-2w5, is officially reported making 300 to 400 bbls. from the lime. Early reports credited this well with a possible 1,000 bbls. The results secured, and the basis on which Imperial Oil, Ltd., developed the acreage, are covered by a statement recently issued by C. G. Spencer, president of the Associated Oil & Gas Co., as follows:

"It was unfortunate that the drilling company lost the bit in this well, which delayed production two or three months; and it is thought the production we are now getting is coming from a horizon above the bottom of the hole. This well is 5,410 feet deep, being approximately 220 feet in the lime. Imperial Oil, Ltd. which is doing the drilling on the property for the Associated Oil & Gas Co., is now erecting the derrick and proceeding immediately with the drilling of No. 2 well, which is situated southeast by west of No. 1 well."

North West Associated's No. 2, same LSD, has derrick completed.

Mayland Oil Co.'s No. 1, LSD 10, Section 17-19-2w5, is at 5,754 feet, 313 feet in the lime, and fishing for drill rods twisted off about 900 feet from the top. The bit is apparently frozen in the lime. Some additional gas has been encountered. Mayland's No. 2, LSD 8, is spudding around a lost underreamer at 3,057 feet; No. 3, same LSD, is below 3,302 feet.

Foothills Oil & Gas Co.'s No. 2, LSD 16, Section 8-19-2w5, is reported making new hole in the lime after drilling out cement at 5,493 feet. Home Oil Co.'s No. 4, Section 20-19-2w5, got the lime at 5,423 feet, and is running and cementing 6¼-inch casing after making a production test of the light crude showings in the Home and Dalhousie sands. The lime is about 400 feet deeper than in No. 3. Home's No. 6, same section, is working on cellar.

Central Field

In the central field it is unofficially reported that production of Royalite Oil Co.'s No. 4, LSD 4, Section 7-20-2w5, which in September practically ceased, had come back to around 9,000,000 feet of wet gas, or about half its normal production. In September the well's crude naphtha recovery dropped to slightly over 1,000 bbls. for the month, as against a normal production of 450 to 500 bbls. a day. Up to September the big gusher showed little variation in its daily average, except for the seasonal fluctuations due to temperature conditions; and the day before it pinched out made 450 bbls., indicating, it is claimed, that the well

(Continued on Page 118)

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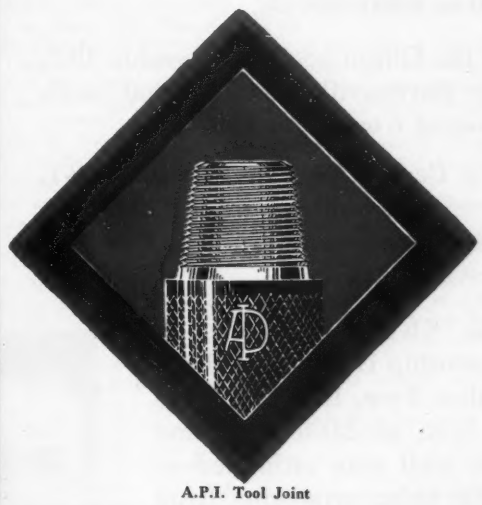

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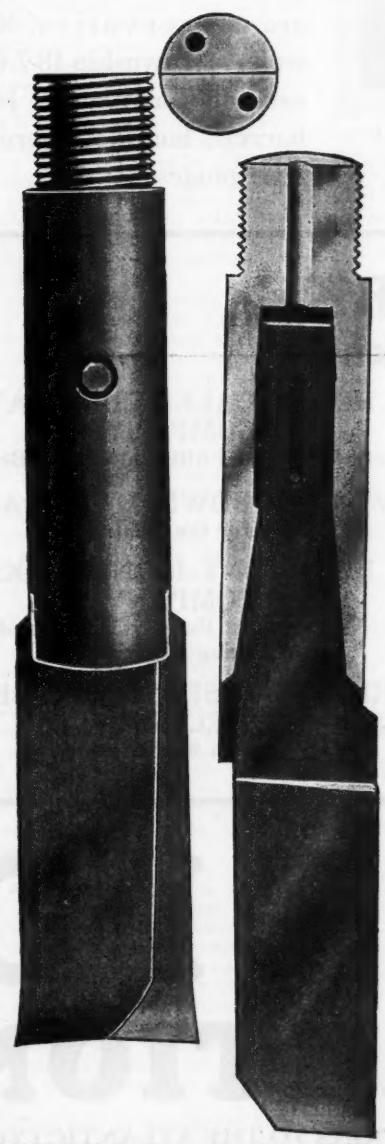

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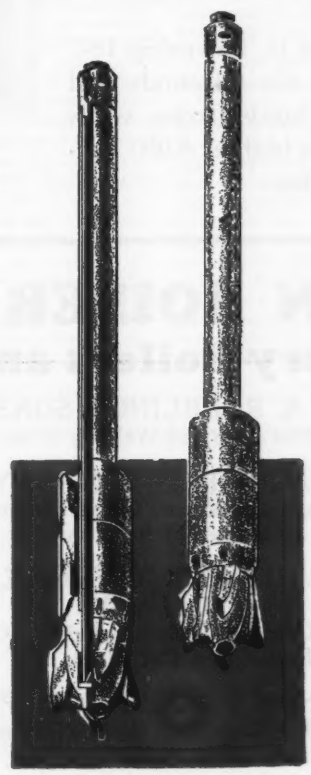

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Drumright, Okla.

For several years the Cushing-Shamrock Field, made up of several pools, including Drumright, Shamrock, Oilton, Pemeta and Olive, was the outstanding high-grade oil field of the U. S. Original discovery well was that of C. B. Shaffer on the Wheeler lease in Sec. 31-18-7 with an initial production of 400 bbls. per day at a depth of 2,319-47 ft., from the Wheeler sand, and was brought in on March 12, 1912. Deeper sands were later discovered and production in the area came from the Bartlesville, Burgess, Tucker, Wilcox and Wheeler sands. Peak production of the field occurred in April, 1915, when 305,000 bbls. were produced.

Up to August 1, 1929, total production had reached 294,089,292 barrels, and present production is around 15,000 bbls. per day.

In the Drumright pool in Township 18-7, oil of 37 to 40.9 degrees was produced. The Layton sand was a gas producer, the Wheeler sand yielded wells of 50 to 300 barrels, the Bartlesville sand wells of 250 to 2,000 bbls. and the Wilcox wells of 100 to 1,000 barrels.

In the Oilton pool in Township 19-7, the Bartlesville sand yielded wells ranging from 50 to 5,000 bbls.

The Pemeta pool in Township 18-7, developed wells up to 8,000 bbls., the biggest ones coming from the Bartlesville sand.

The Shamrock pool in Township 17-7 and northern end of Twp. 16-7, had wells as high as 2,000 bbls., and one well was estimated at 8,000 bbls., producing from the Bartlesville sand.

Olive pool in Township 18-7 produced six oil sands and two gas sands, some wells making as high as 6,000 barrels per day.

C. W. MOORE
Manager of Our Drumright Store

In the Cushing pool various sands were found ranging in depth from the Layton at 1,300 ft. to the Wilcox at 3,480 ft.

Above production figures are conservative. Some wells in Township 18-7 were estimated as high as 14,000 barrels, but they were not true gauges.

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Plan Another Deep Test for West Texas

Gulf Will Start 8,500-Foot Test in McElroy Pool, Crane County. Developments Near Rowan and Tong Area Discouraging

By L. E. Bredberg
Fort Worth Bureau, The Oil and Gas Journal

FORT WORTH, Tex., Oct. 28.—Discouraging developments northeast and northwest of the Rowan and Tong area in Pecos County, a showing of gas in a new area in this county, report of another deep test below 8,000 feet to be drilled in the McElroy Pool, Crane County, and the discovery of a semiwildcat in Fisher County, were the main topics of interest this week for the Permian Basin. The Independent Oil & Gas Co. and Rowan & Tong's No. 1 McDonald, the discovery well in the Grivin Pool, went dead, causing considerable comment and adding to the darkening aspect of this area.

Midwest Exploration Co.'s No. 1 Steele, located 660 feet from the south and 440 feet from the west lines of Section 210, Block 1, B.B.B.&C. Survey, Fisher County, marked approximately a 1½-mile southeastern extension to the Sinclair-Steele Pool when it topped the pay at 2,192 feet and was shut down at 2,193 feet, only 1 foot in the pay, making a flow three and a half hours after the pay was encountered. It is reported that the Humble Pipe Line Co., the pipe line company having the nearest line to the well, will not take the oil due to the line's running to capacity at present, consequently the well is shut in until additional storage can be erected.

The completion of this well opens up at least the intervening 1½ miles to production, and perhaps may claim surrounding acreage, good for production, for quite a distance.

While this well was opening up more territory to the southeast, The Texas Company's No. 1-B Stephens in Section 79, 1 mile to the west of the Sinclair discovery on the Steele ranch, was blotting out acreage to the west as nonproductive, for this well had only a slight show of oil from 3,298-3,302 feet in lime and later struck a hole full of sulphur water from 3,310-15 feet, causing it to be shut down for orders. It probably will be abandoned as dry at this depth.

Farther to the southeast, in Taylor County, the Dunnigan and Shell Petroleum Corp.'s No. 1 Davidson, located in the south half of the W. R. Willis Survey, is still in need of pipe line connections, for no company, having lines in this sector, has agreed to take the oil. It is in the same fix that the Midwest Exploration Co.'s No. 1 Steele is, and is quite indefinite as to when connections to the well may be laid. However, a rumor is being broadcast that a loading rack will be built on the Texas & Pacific Railroad and a line run from the well to the loading rack, the oil thence transported by tank car. This seems to be the only plausible plan at present.

Holds Down Drilling

Due to Dunnigan Brothers and the Shell Petroleum Corp. owning most of the acreage around this discovery, and lack of desire of pipe line companies to take the production, drilling operations in this new area are at a low point and no new tests have been announced. Some deals have been made for acreage in different directions from the discovery, and possibly other tests will be started within a short time, to test the newly purchased land.

R. R. Penn and the Humble Oil & Refining Co. have made location for an offset to their discovery well in Section 7, Block 44, T-2-S, T.&P. Survey, Ector County. This new location is 330 feet south of the center of the north line of Section 16, a direct offset to the south, but on the R. L. York farm. The discovery well is on Kloh and Rumsey land. A location is reported in Section 14, Block 45, T-2-S, T.&P. Survey, made by Gibson and Johnson of Abilene, Tex. Another location is reported to have been made in Section 5, Block A, Public School land, by the Skelly Oil Co., but could not be verified.

The discovery well of Penn and the Humble Oil & Refining Co. is holding up to around 250 bbls. daily through 3-inch tubing. Top of the pay in this well was 3,715-18 feet with an increase from 3,720-25 feet, and the big pay from 3,730-38 feet. Total depth of the hole is 3,744 feet in lime, and the 3-inch tubing was run to 3,450 feet.

To Drill Deep Test

One of the most interesting reports of the week came from the Gulf Production Co. in regard to an 8,500-foot test that it will drill on the northeastern edge of the McElroy Pool, in Section 185, Block 5, C.C.S.D.&R.G.N.G. Survey. It is to carry down its No. 42 McElroy which is located 200 feet from the north and 330 feet from the west lines of the section.

This test will be exceedingly interesting to the operators of West Texas, and to the industry as a whole, for it is approximately 43 miles northwest of the Big Lake Pool, Reagan County, where there are two producers below 8,300 feet, one of them belonging to the Texon Oil & Land Co., and the latest one brought in by the Big Lake Oil Co.

This will be the first deep test for Crane County, giving an absolutely new area a good testing for deeper pay horizons. It is approximately half way between the Reagan County Pool and the Hendricks Pool in Winkler County, and if the well proves a pair producer from deeper pay formations, some company will no doubt sink another similar test in the Hendricks Pool.

The No. 42 well which will be carried on down, was first completed at 2,949 feet for an initial production of 325 bbls.

A gas showing estimated at between 5,000,000 and 10,000,000 feet in the territory north and a considerable distance west, in Cranfill & Reynold's No. 1 Masterson in the SW cor., Section 104, Block 10, H.&G.N. Survey, Pecos County, pepped up many of the operators and individuals interested in this area. The first showing of gas was found from 933-40 feet, and the second showing, an increase, was struck at 1,075 feet. Sulphur water is giving trouble from 920 feet and 8-inch casing will be run to case this off, and the well carried on down. This gas showing is believed to have some significance, and lends a little more prestige to the tests going down between it and the Girvin Pool, and adds to the appearance of the intervening territory, although 5 miles to the northwest of the Rowan & Tong discovery. Condor Petroleum Corp.'s No. 1 Wangerin, located in the NE cor., Section 52, Block 11, encountered sulphur water from 1,655-65 feet, and looks like a dry hole.

Discovery Well Goes Dead

Independent Oil & Gas Co. and Rowan & Tong's No. 1 McDonald, in Section 46, Block 12, H.&G.N. Survey, Pecos County, the discovery well of this area, went dead this week and was given a 5-quart shot from 1,595-1,603 feet. Before the shot it had 50 feet of oil in the hole and after the shot about the same amount. Up to the time it went dead it had been pumping 80 bbls. daily at a total depth of 1,612 feet. Pay in this well was found at 1,605 feet. This added to the gloomy atmosphere of the area, along with the three tests, which look dry, on the north, east and northwest. Merrick and Bristow's No. 1 Neville, 2 miles northeast, encountered sulphur water at 1,656-66 feet, much below the discovery well's pay, consequently makes that direction look doubtful at present. The Red Bank Oil Co.'s No. 1 Neville, a mile northeast, encountered sulphur water at 1,775 feet, about 110 feet below the bottom of the Rowan & Tong well, and the Condor Petroleum Co.'s No. 1 Wangerin, in the NE cor., Section 52, Block 11, about 5 miles west, encountered water from 1,655-65 feet, making that direction rather cloudy.

The Landreth Production Co. brought in a good well in the Taylor-Link Pool, Pecos County, this week, in its No. 2-C University, in the NW cor. SW, Section 31, Block 16. A shallow pay was found at 1,355 feet and the well flowed 375 bbls. in 21 hours. The second pay was found from 1,633-35 feet and the well flowed 1,368 feet in 24 hours ending 7 a.m. October 27, flowing 1,399 bbls. the first 24 hours it was completed. Another good well of this company was its No. 2-B. It was completed at a total depth of 1,622 feet after encountering pay at 1,602 feet, and coming in for an initial production of 752 bbls. These two wells help to bring back the Taylor-Link Pool to a favorable appearance after having seen several rather small wells completed, and some dry holes.

Texon Oil & Land Co.'s No. 1-B, the deepest cable tool producer in the world, has rather been out of the picture for some time, but this week it staged a comeback and took a little attention from the second deepest well in the Big Lake Pool, Big Lake Oil Co.'s No. 3-C University, which is producing from 8,380 feet, but which has been killed with water this week, the fishing job continuing. The gas gauged 26,599,000 feet one day this week in Texon's No. 1-B, and the daily gas flow averaged 26,351,000 feet, the highest daily average in gas, and two days registered the highest amount of gas produced. It also produced 2,910 bbls. of oil, another peak for its crude production.

A canvas of the companies producing 97 per cent of the total output of the Hendricks Field indicates they favor the extension of proration of that pool, in Winkler County, and due to the present six months period of proration expiring on November 4, the Railroad Commission has called a meeting to be held at 10 o'clock a.m. on that date, at the Texas Hotel, in Fort Worth, for the discussion of proration and its possible extension over another six months' period. Although there are no leases in the field producing more than their allowance, it is generally believed that proration is the best thing for the field, consequently proration will no doubt be extended over another period.

WILDCAT OPERATIONS IN WEST TEXAS

Week Ended October 28

Company, farm and location—	Remarks—
ANDREWS COUNTY	
Deep Rock's No. 1 Ogden, 2,310 ft. E, 330 ft. S, Sec. 6, Blk. A-46, Public School Land	Reaming 10-in. casing 1,640 ft.; drlg. 2,060 ft.
BORDEN COUNTY	
Louisiana Oil & Ref. Co.'s No. 1 Miller, 1,320 ft. from W and 150 ft. from S line, Sec. 355, Blk. 97, H.&T.C.	Top lime 2,300 ft.; hole full sulphur water 3,005 ft.
Moncrief et al's No. 1 Munger, C of SW, Sec. 14, Blk. 31	Drlg. 2,300 ft.
Teas & Wheeler's No. 1 Long, 1,320 ft. N and E of Sec. 27, Blk. 30, T.&P. Sur.	Top salt 1,030 ft.; shut down to repair rig.
BREWSTER COUNTY	
E. W. Bateman et al's No. 2 Nevill, 2,000 ft. S and W line of Sec. 62, Blk. 13, G.H.&S.A.R.R. Sur.	Shut down 2,274 ft.
Brewster Oil Co.'s No. 1 fee, 2,640 ft. S and 2,598 ft. E of NW cor., Sec. 45, Blk. G-15, G.C.&S.F.	Shut down 1,935 ft.
Cowden & Bowser's No. 1-A Jackson & Harmon, Sec. 1, Blk. 331, T.C.R.R. Sur.	Set 8-in. 1,550 ft.; shut down 2,000 ft.
Forrest Oil Co.'s No. 1 Skinner, C SW SE, Sec. 100, Blk. 2, G.C.&S.F. Sur.	Drlg. 732 ft.
Grastorf et al's No. 1 Redfield, 920 ft. from N and 2,500 ft. from E of Sec. 18, Blk. G-15, G.C.&S.F.R.R. Sur.	Location.
J. M. Hickey's No. 1 Jackson & Harmon, NE cor., Sec. 132, Blk. 9, G.H.&S.A. Sur.	Shut down 2,000 ft.
Van McPhail's No. 1 McIntyre, SE cor. Sec. 59, Blk. 352, 7 mi. S of Alpine	Shut down 1,740 ft.
COKE COUNTY	
Lipan Oil Co.'s No. 1 E. C. Rawlings, Sec. 390, Blk. 1-A, H.&T.C. Sur., elev. 2,750 ft.	Shut down 2,892 ft.
Mid-Kansas Oil Co.'s No. 1 W. E. Lackey, 330 ft. N and E of SW cor., Sec. 272, Blk. 1-A, H.&T.C.	Pay 3,755-56 ft.; 6⅝-in. casing set 3,451 ft.; underreaming at 4,058 ft.; shut down 4,139 ft.
CONCHO COUNTY	
Duffy et al's No. 1 Callan, 1,520 ft. N and 1,120 ft. W of SE cor., Sec. 21, Blk. 10, H.&T.C.R.R.	Spudded and shut down.
Jones & Leiner's No. 1 Jones, 420 ft. S and 15 ft. E of NW cor. John G. Reh Sur. No. 1,378	Top lime 1,770 ft.; top pay 1,775-80 ft.; 18 ft. oil in hole; to test; shut down 2,375 ft.
Turner et al's No. 1 Borsig, 150 ft. from S of SE cor. G. Emig Sur. 130, 6 mi. W of Paint Rock	Shut down 735 ft.
CRANE COUNTY	
Church & Field's No. 4 University-Dewell, 2,310 ft. N and 990 ft. E of SW cor. Sec. 39, Blk. 30, University Land	Drlg. 2,575 ft.

(Continued on Page 106)

WEST TEXAS PRODUCTION

Week Ending October 26

County—	Wells	Bbls.
Crane County	318	36,496
Crockett County	44	1,658
Ector County	4	351
Fisher County	7	1,490
Glasscock-Howard	412	40,157
Jones County	78	2,725
Loving County	14	890
Mitchell County	142	2,465
Pecos County	347	139,731
Reagan County	251	17,221
Runnels County	3	15
Scurry County	5	27
Upton County	239	9,997
Ward County	14	1,734
Winkler County	598	111,996
Total this week	2,471	366,953
Total last week	2,461	373,005
Difference	10	6,052

(Continued on Page 72)

Two Extensions in Wichita County

Good Wells in Gray County and Small Extension in Carson County. Coleman County's New Pool Opener Completed

By L. E. Bredberg
Fort Worth Bureau, The Oil and Gas Journal

FORT WORTH, Tex., Oct. 28.—Two extensions in Wichita County, two good wells in Gray County, a small extension in Carson County, with still another decrease in the Gray County production, marked the important events of the week in the Panhandle and North Texas districts, with the rest of the counties in these districts merely "marking time."

Continental Oil Co.'s No. 1-A Slaughter, in the SW cor. of Section 130, Crosby County School Lands, Cochran County, was shot this week, for the third time, but no results. This third shot consisted of 150 quarts, and was set off from 4,735-70 feet, but the 900 feet of fluid in the hole, of which 15 per cent was sulphur water, was not increased by the shot, and it now looks as if the well would have to be abandoned as a dry hole. Total depth of the hole is 5,001 feet, but it was plugged back to 4,900 feet. The oil showing was encountered from 4,873-88 feet.

Gray County's Best

The best well in Gray County this week was brought in by the Shamrock Oil Co. in its No. 2 Lincoln-Saunders, located 330 feet from the south and east lines of the W half NE cor., Section 3, Block 1, A.C.H.&B. Survey. Granite wash pay was found from 2,491-92 feet at which latter depth the well was shut down, flowing 3,200 bbls. in 24 hours ending 7 a. m., October 27. The second good well was completed by the Panhandle Refining Co. in its No. 3 Saunders, located in the northeast quarter of the same section and survey. Total depth of this well was 2,483 feet, it being only 3 feet in the granite wash pay and producing 1,370 bbls. the first 24 hours. The Shamrock well came in making only 1,400 bbls. the first 24 hours with 12,000,000 feet of gas, but the production increased to 3,200 bbls. on October 27. Although these two good wells and a few other smaller wells were completed in Gray County this week, flush production falling off caused the county to decline over 3,000 bbls. making a new "low" for the county of 63,671 bbls. daily average. This means about a 44,000-bbl. drop from the highest daily average of a few months past when production in the county was so great that the operators and companies held a meeting to plan curtailment of drilling and completing wells. As a result of the two meetings many of the wells were shut down in the top of the pay to allow production to slacken to such an extent that storage and pipe lines could handle the production in this area.

In Carson County the Continental Oil Co. extended production in the Block Pool approximately one-half mile farther south when it completed No. 1 Block in the NE cor. SE, Section 111, Block 4, I.&G.N. Survey, for a 450-bbl. well, swabbing and flowing. Total depth of the well is 3,105 feet, and it was given a 300-quart shot from 3,025-3,105 feet. This pool is 2½ miles north of the town of Roxana.

Wichita County Extension

The Star Drilling Co. encountered an oil showing from 1,798-1,811 feet, the latter depth being the bottom of the hole, and completed its No. 2-B Crudup for an initial production of 168 bbls. in eight hours. This well is in the NW Section 10, League 4, Denton County School Lands, Wichita County, about 2½ miles north of the town of Holliday. It is surrounded on all sides by dry holes except on the west where there are three small producers at a distance of about a half mile. Although cornered by dusters there is plenty of room for several more producers and locations have been made for offset tests, and tests nearby.

Another semiwildcat discovery in this county was made by Sheldon and Jamison in No. 1-A Volkhart in Block 309 of the Waggoner Colony Subdivision, 5 miles northeast of Electra, and southeast of the Sheldon and Venmex producers 1 mile. The producers are in Section 303 of the same survey. Top of the pay of this new producer was encountered at 1,913 feet and the hole bottomed at 1,930 feet and the well is estimated good for around 300 bbls. daily. This opens up more territory for testing in this area and offset locations have already been staked.

The Arkansas Gas & Fuel Co. purchased 69 acres in Section 82, H.&T.B. Survey, Abstract 139, and the north 10 acres of the center 40 acres of Section 45, H.&T.B. Survey, with 23 producing wells having a total daily average of 172½ bbls. The production is coming from four pay horizons, and there are several undeveloped locations to be drilled. This acreage and production lies about 5 miles northwest of the town of Holliday in Wichita County. Holbrook and Woods were the former owners, and a consideration of $160,000 cash was named as the price paid.

Brown County

Brown County, Texas, witnessed a 200-bbl. daily average increase this week due to Anna B. Gordon's Nos. 2-A and 3-A Cannon being completed for a total of 480 bbls., and E. L. Smith Oil Co.'s No. 10 George for an initial production of 150 bbls. Coleman County also showed a gain of 650 bbls. due to 10 completions in the Morris-Keeney-Crowder area. The combined total of these 10 completions gave them an initial production of 2,805 bbls.

Joines' No. 1 Stewartson, 150 feet from the north line and 1,150 feet from the west line of Section 96, E.T.R.R. Survey, Coleman County, which opened up a new pool on October 8, was completed this week for an initial production of 30 bbls. Total depth is 1,466 feet and top of the Brenecke sand was found from 1,459-66 feet. Joines has made location for his No. 2 Stewartson, 450 feet from the north and 1,430 feet from the east lines of the same section.

An interesting test in the Morris-Keeney-Crowder area is the E. L. Smith Oil Co.'s No. 1 Crowder, 150 feet from the northwest corner of its 50-acre lease. It set pipe at 1,925 feet and is preparing to drill in. In case this well is a producer it will extend the field for another 1,000 feet to the south, for it is the farthest south well drilling at the present. Most of the inside locations have been drilled in this area, and some wildcatting is now being done in an effort to extend the pool in the various directions not yet tested. The Eastland Oil Co.'s No. 1 Griffith, 200 feet from the north and 250 feet from the east line of the Griffith 140-acre tract in the John H. Wood Survey is another interesting test southwest of the pool. It is a mile southwest of the proven area and lies between the producing contours, and if proved a producer will extend the pool a considerable distance, opening up more inside locations for production.

South of Overall

South of the Overall Pool, Bebout and Sullivan and others completed their No. 5 Haas for a commercial producer, and another test one-half mile farther south, drilled by Massey and others, has a gas showing in top of the sand at 1,480 feet. It is now troubled with a fishing job. Should this test make a producer, as it promises, it will add quite an extension to the Haas Pool.

In the Taylor-Link Pool near the town of Shields, the Taylor-Link completed No. 1 Williamson for a dry hole this week at a total depth of 2,142 feet

Jim McCamey and others' No. 2 Sealy & Smith, in Section 35,, Block 1, G.&H. Survey, 300 feet from the north and 4,950 feet west of the most westerly NW cor., Section 35, is now shut down at 1,560 feet with 1,000 feet of oil in the hole and looking promising to opening a new pool in this part of Coleman County. It is approximately one-quarter mile southeast of McCamey's No. 1 Bucher and others in Section 301, Josias B. Beall Survey. This first test of McCamey's was completed as a 7,000,000-foot gasser at total depth of 2,981 feet. Three-quarters of a mile southwest is McCamey's No. 1 Sealy & Smith test which was abandoned as dry at 3,205 feet. All of these wells are located about 4½ miles southeast of Talpa, and the new discovery will open up considerable new territory in this part of Coleman for exploitation.

NORTH TEXAS PRODUCTION
Week Ending October 26

Panhandle district—	Bbls.
Carson County	10,131
Hutchinson County	27,440
Gray County	63,671
Moore County	900
Potter County	0
Wheeler County	555
Total this week	102,697
To.al last week	106,140
Decrease	3,443
Wichita district—	
Archer County	18,251
Baylor County	68
Clay County	753
Cooke County	10,271
Foard County	219
Jack County	3,741
Haskell County	92
Montague County	6,349
Throckmorton County	637
Wilbarger County	30,511
Young County	6,458
Wichita County	25,241
To.al this week	102,591
Total last week	103,244
Decrease	653
Ranger district—	
Brown County	11,166
Callahan County	3,465
Coleman County	8,785
Comanche County	1,238
Palo Pinto County	545
Eastland County	5,585
Shackelford County	9,980
Stephens County	6,391
Total this week	47,155
Total last week	46,275
Increase	880
Total this week	252,443
Total last week	255,659
Decrease	3,216

WILDCAT OPERATIONS IN TEXAS PANHANDLE

Week Ending October 28
CARSON COUNTY

Company, well, farm, name, section and block—	Remarks—
Danciger O. & R. Co.'s No. 1 Block, 330 ft. from N and E lines, Sec. 112, Blk. 4, I.&G.N. Sur.	S.D. 2,851 ft.
Delmar Oil Co.'s No. 5 Noel, 330 ft. S and W, NE cor. W½ SE, Sec. 198, Blk. 3, I.&G.N. Sur.	S.G. 3,000-10 ft; S.D. 3,131 ft.
Empire G. & F. Co.'s No. 1 Fields, 1,650 ft. from N and E, Sec. 13, Blk. 7, I.&G.N. Sur.	Shut down.
Empire G. & F. Co.'s No. 2 Deahl, 660 ft. N and E, SW, Sec. 3, Blk. 5, B.&B. Sur.	Spudding.
Empire G. & F. Co.'s No. 1 Thorp, C NW, Sec. 26, Blk. T, A.B.&M. Sur.	Location.
Ham Oil Co.'s No. 1 Cooper, 330 ft. from S and W, E½ NE, Sec. 5, Blk. 9, H.&G.N.R.R. Sur.	Location.
Herragan Oil Co.'s No. 1 L. C. McConnell, 330 ft. N and W lines, W½ SW, Sec. 187, Blk. 3, I.&G.N. Sur.	S.G. 2,780 ft; increase from 2,860-2,908 ft; S.D. 2,925 ft.
S. D. McElroy's No. 1 Block, 330 ft. from N and E, NE NW, Sec. 112, Blk. 4, I.&G N.R.R. Sur.	Location.
Osborne et als' No. 3 Percival, 330 ft. N and W, SE cor. E½ NE, Sec. 199, Blk. 3, I.&G.N.R.R. Sur.	Location.
Pansota Oil Co.'s No. 1 Block, 330 ft. S and W, NE cor. SW, Sec. 111, Blk. 4, I.&G.N.R.R. Sur.	Cellar.
Phillips Pet. Co.'s No. 1 Garner, 330 ft. N and E, SW cor. SW, Sec 114, Blk. 4, I.&G.N. Sur.	U.R. 6-in. csg. at 2,940 ft.
Prairie O. & G. Co.'s No. 2 Nail, 330 ft. from N and W lines, N½ E½ SE, Sec. 198, Blk. 3, I.&G.N. Sur.	10,000,000 ft. gas 2,830-3,985 ft; S.D. 3,112 ft.
Red River Gas Co.'s No. 3 Lee Bivins-A, C SE SE, Sec. 43, Blk. M-20, G.&M.R.R. Sur.	S.D. 550 ft.
Reynolds et als' No. 2 Cooper, 330 ft. from S and W lines, E½ NW, Sec. 5, Blk. 9, I.&G.N. Sur.	Drlg. 2,450 ft.
Ryan Cons. Oil Co.'s No. 5 Block, 330 ft. N and W, SE cor. NE, Sec. 111, Blk. 4, I.&G.N. Sur.	Drlg. 2,840 ft.
Ryan Cons. Oil Co.'s No. 6 Block, 330 ft. S, 990 ft. E, NW NE, Sec. 111, Blk. 4, I.&G.N. Sur.	U.R. 8-in. csg. at 2,337 ft.
Shell Pet. Corp.'s No. 1 Percival, 330 ft. from N and E, SE, Sec. 199, Blk. 3, I.&G.N. Sur.	Rig.
Skelly Oil Co.'s No. 18 Schafer, 330 ft. N, 990 ft. E, SW cor. NE, Sec. 198, Blk. 3, I.&G.N. Sur.	6,000,000 ft. gas 2,895-2,970 ft; S.D. 3,100 ft.
Skelly Oil Co.'s No. 20 Schafer, 330 ft. N, 990 ft. W, SE cor. N½, Sec. 198, Blk. 3, I.&G.N. Sur.	S.D. 3,090 ft.
Skelly Oil Co.'s No. 21 Schafer, 340 ft. N, 1,540 ft. W, SE cor. SE, Sec. 68, Blk. 4, I.&G.N.R.R. Sur.	Location.

(Continued on Page 105)

RANGER COMPLETIONS

Week ending October 26

Brown County

G. A. Brider's No. 5 Kessler was drilled to a total depth of 1,340 feet, topped the pay at 1,320 feet and had an initial production of 150 bbls. His No. 5 Munselle was dry and abandoned at 1,192 feet. Gilman & McMurray's No. 7 Hickman was dry and abandoned at 1,400 feet. Anna B. Gordon's No. 2-A Cannon was drilled to a total depth of 1,189 feet, topped the pay at 1,172 feet and had an initial production of 380 bbls. Her No. 3-A Cannon was drilled to a total depth of 1,195 feet, topped the pay at 1,180 feet and had an initial production of 300 bbls. Gore & Brown's No. 1 Dabney was dry and abandoned at 720 feet. Humble Oil & Refining Co.'s No. 3 Munselle topped the pay at 1,130 feet and was drilled to a total depth of 1,145 feet. Owens, Inc. and others' No. 6 Cannon was dry and abandoned at 1,208 feet. E. L. Smith Oil Co.'s No. 10 George was drilled to a total depth of 1,343 feet, topped the pay at 1,323-30 feet and had an initial production of 150 bbls. The Texas Company's No. 10 Kessler was drilled to a total depth of 1,305 feet, shot with 5

(Continued on Page 111)

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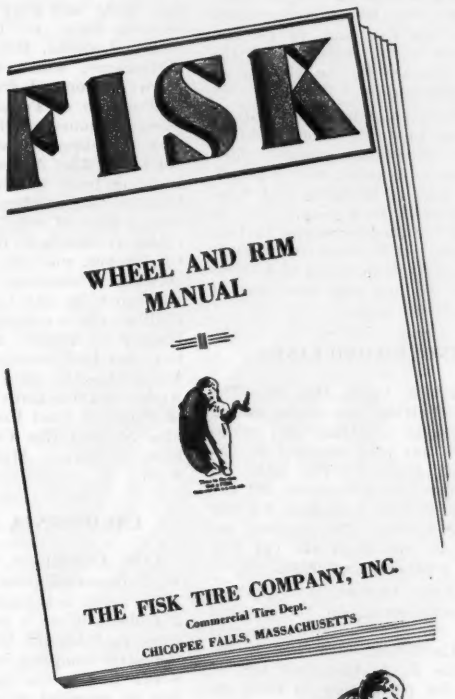

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Pipe Line Construction News

CONDITIONS IN STEEL FAIR ON LONG RANGE

By B. E. V. Luty

PITTSBURGH, Pa., Oct. 28.—Pipe and tube mills are operating at about the same rate as a week ago, when each class of mill was estimated to be averaging 65 to 70 per cent.

Demand for standard pipe is running about the same as a year ago. While general reports show somewhat less building this year than last there has been no material decrease, if any at all, in standard pipe. Prices on standard pipe are strictly held in practically all sections while earlier in the year there was much cutting by jobbers in various districts.

Nothing new is reported in line pipe, which seems to be done for the season. There are chances that an agreement will be reached before the end of the year between the two parties contemplating a natural gas line from Texas to Chicago, whereupon orders for something like 200,000 tons of pipe would no doubt be placed promptly.

Steel demand as a whole has lost some ground since the first of the month and there has also been some easing off in prices, but there is not much change from week to week.

Production of steel ingots has been about 80 per cent in the past couple weeks, against over 99 per cent officially reported for last May. Further recession, chiefly as a seasonal matter, is to be expected to the end of the year when it is quite conceivable production may be at under 70 per cent. However, it has been the invariable precedent for production to increase sharply in the first three or four months of the year. It is natural for January to show a gain over December as buyers hold deliveries back on account of inventory and then promptly make up the arrearage.

While steel conditions look poor by comparison with conditions in the first half of the year, they are very fair by a long range comparison. Production this month has been a little below that of last October, but then production was exceptionally heavy. Even with a larger decrease in production in the next two months than is at all probable, the year's total would be 10 per cent or more over that of last year, a very heavy gain for a single year seeing that 1928 was only 7 per cent over 1926 while the year between had lighter production.

The common view is that there has been a big slump in automobile production, but it is rather a case of production having been phenomenally heavy earlier in the year and now reverting to the general average. September production of cars and trucks, United States and Canada, was 429,149, which is 35 per cent under last April, the peak month, but is only a shade below September of last year and is above any other September. Automobile production is certain to be light during the remainder of the year as there are some stocks of new cars and large stocks of old cars to be liquidated. There is a good bit of talk about plans of makers for the new year but nobody knows how the public will buy cars next year and plans in the automobile trade are always subject to sudden modification.

The annual rail buying movement is now more than half over. It is substantially of normal proportions as to tonnage. Latest orders reported are 310,000 tons by the Pennsylvania, 194,030 tons (outside of 12,400 tons ordered in Canada) by the New York Central and 46,460 tons by the Erie. The total on the movement is about 940,000 tons. Last year the same roads ordered about 900,000 tons and the year before about 925,000 tons. A considerable part of the tonnage will be rolled before the end of the year.

Since last report the Southern, Great Northern, Baltimore & Ohio and Santa Fe have ordered 11,450 freight cars, making 18,650 cars thus far this month. Now there are chances that the freight car shops will not have to curtail operations much, as was recently expected.

TO START LAYING LINE TO BARBERS HILL FIELD

HOUSTON, Tex., Oct. 28.—The Texas Pipe Line Co. has purchased right of way and will start laying pipe shortly on a 6-inch line from Dayton to Barbers Hill, a distance of 13 miles. This will make the fifth pipe line outlet from Barbers Hill, whose deep sand development on the east and south flanks the past year has boosted its daily production to between 20,000 and 25,000 bbls.

The line is being built chiefly to run any oil produced by The Texas Company, which Saturday had one well due in and four other deep tests drilling. The line at Dayton will make connection with the Texas Pipe Line Co.'s trunk system from Houston to Port Arthur.

Other lines serving Barbers Hill at present are Liberty Pipe Line Co., running from the field to Cedar Bayou from where the oil is barged, to Texas City; Sun Pipe Line Co., which recently purchased the unused section of Liberty Pipe Line Co.'s line extending from the field to Liberty; Humble Pipe Line Co. and Gulf Pipe Line Co.

LINE FROM FANNETTE DOME

HOUSTON, Tex., Oct. 28.—Gulf Pipe Line Co. has started work on laying a 6-inch line from the new field on the Fannette Dome, Jefferson County, to its tank farm at Lucas, a distance of approximately 15 miles. Laying of the line is following the completion of two good wells by the Gulf Production Co. the past three weeks which has definitely established the dome as a commercial producer of major proportions. The field has had production for a year but wells have been small or short-lived and what oil was produced was moved out by tanks.

COMMISSION INSPECTING ROUTES FOR IRAQ LINE

A mission sent by the Iraq Petroleum Co. has arrived in Beirut. The three members, Parmentier (French), Douglas (British), and Van Towl (American), are seeking the best possible terminus on the coast between Haifa and Alexandretta for a pipe line to bring oil from Iraq to the Mediterranean.

The two most likely routes are (1) from the oil fields of Kirkuk and Khanaquin to Haifa, entirely through British mandated territory, or (2) to Tripoli, a town north of Beirut in the French mandate of Syria. The latter route would be shorter if the line was to be laid from Mosul but it now appears that the best oil districts are in the vicinity of Kirkuk and Khanaquin.

It is, therefore, possible that it will be decided to build pipe lines from both the Kirkuk and Khanaquin areas, which would converge at a point near Ramadi, 40 miles due west of Baghdad, and from there be prolonged as a single line to some point on the Mediterranean in Palestine or Syria. It is estimated that it would cost in the neighborhood of $40,000 a mile to lay 14-inch pipe over one of those contemplated routes.

PLAN INGLEWOOD LINES

LOS ANGELES, Calif., Oct. 26.—The second petition within two weeks asking for a franchise to construct and maintain pipe lines has been received by the Inglewood City Council. The most recent applicant is the Associated Oil Co. It asks for a 40-year franchise for not more than three lines. The previous petition was from the Richfield Oil Co., which sought a 21-year franchise.

Having a direct bearing, it is pointed out by the petitioners, on the present movement for conservation of natural gas in southern California oil fields, is the petition of the J. A. Campbell Co. of Long Beach for permission to erect an absorption plant on three lots on Nutwood Street west of Prairie Avenue.

"By giving your consent," the letter says, "it will be possible to have the natural gas treated and devoted to a useful purpose, instead of going to waste. Recent developments indicate that the field will extend farther southward. The Potrero Country Club, directly opposite, is under lease to the Associated Oil Co."

The petition was taken under advisement.

GAS LINES TO OKLAHOMA TOWNS

There is much activity in construction of gas distribution lines, especially in western and southern Oklahoma. The State Fuel Supply Co. is constructing gas distribution systems in Carnegie, Mountain View and Fort Cobb and may extend its lines to Gracemont, Binger, Geary, Lookeba, Bridgeport and Hinton. Hartshorne, which in September voted down a proposed franchise to Lambert & Freeborn of Tulsa, has adopted a revised ordinance which provides for voting on a franchise to the same applicants on November 12. A gas distribution system is being built by the Consolidated Gas Utilities Co., at Hammond. William Horwitz of Fort Worth, Tex., is seeking franchises at Shattock, Gage and Fargo. A. C. Fletcher, who was recently voted franchises at Tishimingo and Madill, has begun work on gas lines. The Cimarron Utilities Co. is completing a gas line from Hooker to Beaver and Forgan. Work has also been started by the Northwest Texas Gas Co. on a gas line connecting Atoka and Coalgate with the gas fields of northern Coal County. The Community Natural Gas Co. is completing gas lines in Snyder, Manitou and Mountain Park.

CALIFORNIA EXTENSIONS

LOS ANGELES, Calif., Oct. 26.—With increased production at Kettleman Hills which is taxing capacity of General Petroleum Corp.'s pipe line under contract to Standard Oil Co. of California, the latter company is rushing work on its 8-inch line to the coast. The tidewater line is expected to be completed before November 1, according to men in charge of construction work. A submarine section will be laid between Morro Bay and Cayucos to make tanker loading possible.

The new line will have capacity of transporting 50,000 bbls. of oil daily. More lines also are being laid, including a gasoline line about 9 miles in length, extending along Kettleman Hills from the Standard camp. Plans are also under consideration by Standard for a line connecting the north and south dome.

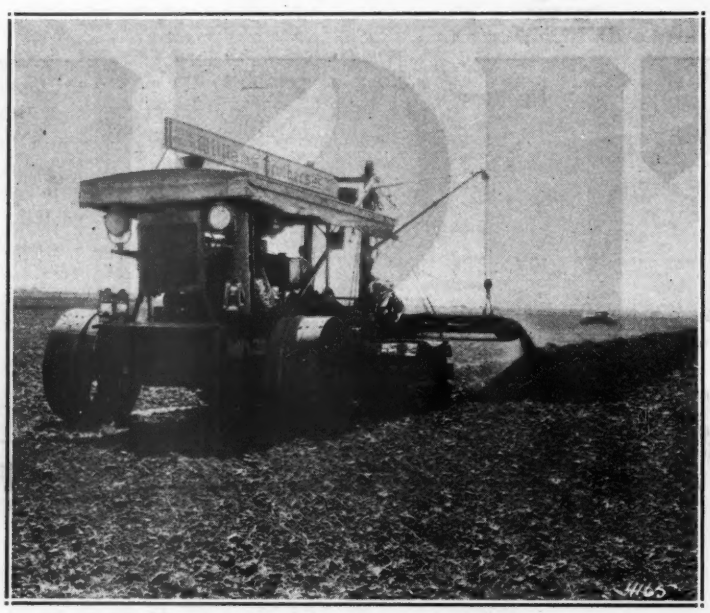
KENTUCKY LINE COMPLETED

The The Illinois Pipe Line Co. has completed its 10-mile extension to the Creek Drilling Co., or Miller and Damron's wells west of St. Joseph, near the McLean County, Kentucky, line, and drew off the tanks that had been standing full of oil for a number of weeks. The four or five wells now under the pump on that acreage will now be worked at capacity, with a means of transportation of oil.

GAS LOOP TO HOUSTON

HOUSTON, Tex., Oct. 28.—Houston Pipe Line Co., subsidiary of the Buckner interests, has completed an additional loop near Victoria on its main gas line from Southwest Texas to Houston. The loop is a 16-inch line and approximately 20 miles long, paralleling the main line. The company is steadily looping all its main line to increase its potential capacity into Houston.

DITCHING FOR PIPE LINE CONSTRUCTION



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The photograph above shows a Guiberson Swab doing service for Ray Wilson, Driller, (the man with the cap, then, reading to the left) Ralph Signs, Tooldresser; R. D. Wilson, Tooldresser, and Hugh Powers, Driller, working near Bristow, Oklahoma.

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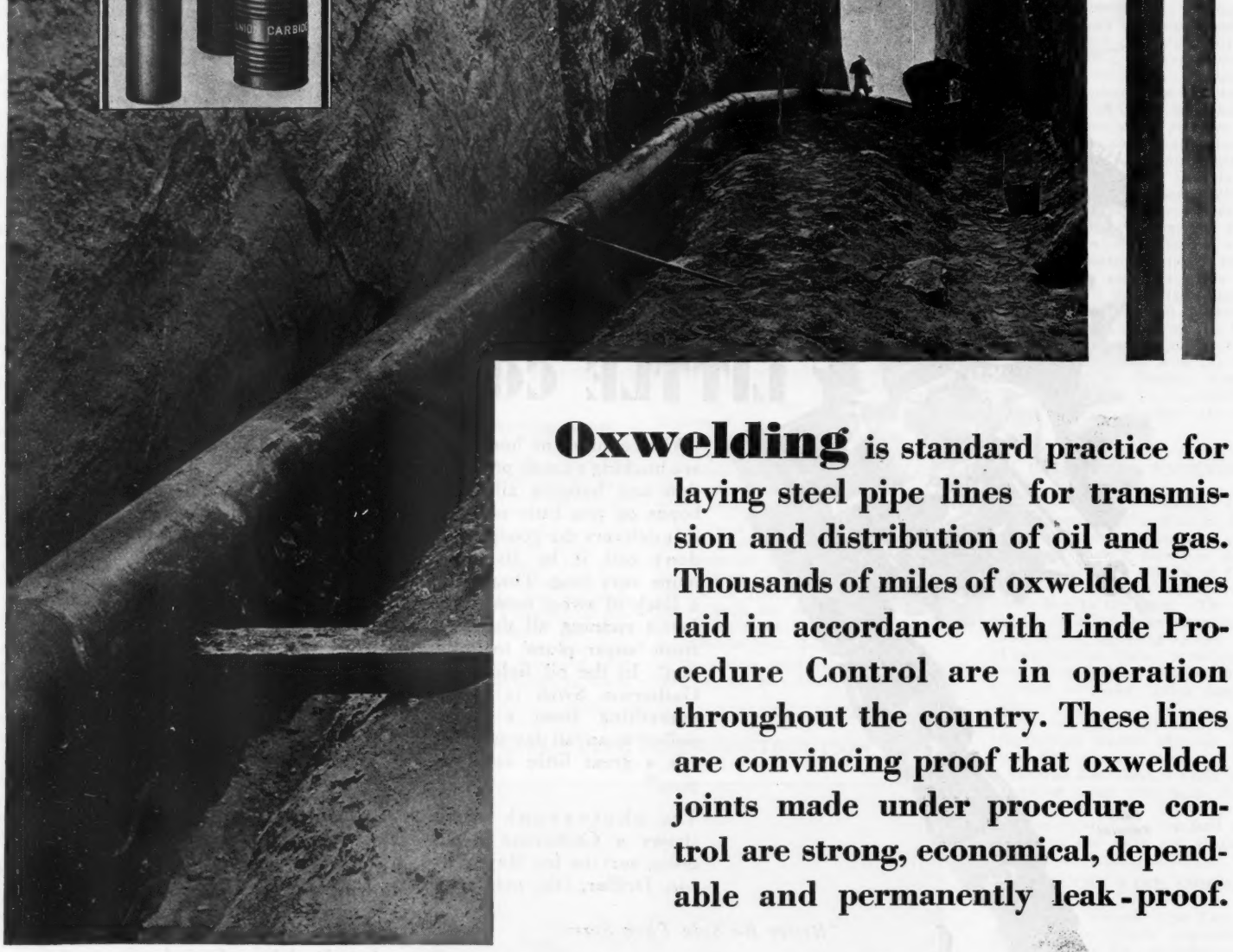

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OKLAHOMA FIELDS

(Continued from Page 50)

nearly 2,000 bbls. last week. No new production was added to this pool during that time. Sinclair Oil & Gas Co.'s No. 7 Phillips, SE cor. Section 5-7-7, is shut down on account of the proration plan, with a hole full of oil from the Wilcox sand at 4,179-4,212 feet. It has been shot with 30 quarts but not cleaned out. Same company's No. 6 Phillips, was completed for 750 bbls. a few weeks ago.

New wildcat tests in the Seminole area this week include the Independent Oil & Gas Co. and others' No. 1 Johnson, NW cor., Section 20-8-6. Gypsy Oil Co.'s No. 1 Fehlig, SW cor., Section 4-8-5. If this test finds production it would be an important extension to the Misener sand pool in the Maud area.

The new Texas-Empire pipe line has been in operation for the last two weeks. It received from the Empire 5,300 bbls. daily, from the Texas 6,300 bbls. daily, from the Tidal 8,500 bbls. daily, and from the Indian Territory Illuminating Oil Co. 3,200 bbls. daily, all shipped from Seminole area to their different refineries in Illinois.

Greater Seminole Production

The daily average production for the Greater Seminole area is showing a decline for the week ending October 23. Ten new wells were added to the area. The gauges for the various pools were as follows:

Company—	Wells	Prod.
Little River	346	50,357
East Little River	35	24,879
Carr City	57	9,941
Maud	134	10,739
Mission	110	18,543
Bowlegs	295	29,807
Earlsboro	293	43,511
East Earlsboro	41	25,145
Seminole	274	29,410
East Seminole	27	5,844
Searight	83	11,693
St. Louis	430	54,590
Asher	21	5,890
Sasakwa	29	11,519
Allen	228	24,345
Total	2,403	356,213

Wildcat Activities

The northwestern part of the State is being leased for the future. A block is being assembled in Woodward County, in Township 22-18w. Another in Ellis County, in Township 24-24w. Geological parties are extending to all parts of this area. Several companies have parties at work in Ellis County, southeastern Harper County and Blaine County at this time.

The drilling reports from the various wildcat tests in that part of the State indicate that it will probably be next spring before any of these wells are deep enough to determine results, good or bad. The deepest test is Bu-Vi-Bar and others' No. 1 fee, SE cor. SW, Section 10-25-15w, Woods County. It had the top of the Mississippi lime at 5,937 feet, and was drilling in it at 5,945 feet, on October 24. Prairie Oil & Gas Co.'s No. 1 Wilber, NE cor., Section 23-23-17w, Woodward County, was drilling at 5,649 feet, in sandy shale carrying a hole full of water. Harris & Haun's No. 1 Wyatt, SE cor., Section 9-23-20w, Woodward County, was fishing at 4,630 feet. Sinclair Oil & Gas Co.'s No. 1 Howell, C SW SW, Section 14-26-24w, Harper County, was drilling at 5,442 feet, in shale in a rotary hole with nothing showing. Same company's No. 1 Shore, C NE SW, Section 33-27-16w, Woods County, was drilling by tools that were lost at a total depth of 5,340 feet. Peerless Oil & Gas Co.'s No. 1 Cromwell, C NW NE, Section 23-28-16w, Woods County, is rigging up on the new hole.

A new wildcat test is rumored in the NW Section 16-22-6w, Garfield County. It will be located a short distance east of Enid. It will probably be drilled by Champlin Oil & Refining Co. Another wildcat test is expected to be drilled in the NE SW, Section 1-18-8w, Kingfisher County. This will be on a 2,500-acre block owned by Fisher & Murphy. The test will be drilled to 4,000 feet, and is expected to be started by the first of the year.

Magnolia Petroleum Co.'s No. 1 Decker, SE cor. SW, Section 8-14-4, Lincoln County, averaged 310 bbls. last week ending October 24. It is the only producing well in the area.

In Payne County

Shaffer Oil & Refining Co.'s No. 2 Little Chief, SW cor. NW NE, Section 4-18-5, Payne County, averaged 540 bbls. last week ending October 24. This well is producing from the Wilcox sand at 3,482-3,534 feet. It has started making water, which the operators believe is coming from the bottom of the hole. It is still the only producing well in the section. Same company's No. 2 Echo Hawk, NW cor. NE, Section 9-18-5, Payne County, averaged 350 bbls. last week ending October 24, from the Wilcox sand at 3,573-91 feet.

The Marshall Pool in Logan County showed an increase last week of 1,575 bbls. The following gauges are by companies and leases for the week ending October 24:

Company, farm—	Wells	Week ending Oct. 17	Week ending Oct. 24
Crosby, Shaffer	5	965	905
Cosden, Gardner	1	2,832	2,439
Wentz, Williams	1	1,562	1,999
Shell, Shaffer	1	31	33
Shell, Freelove	2	237	193
Shell, McCully	7	7,375	7,847
Shell, Ross-A	1	9	10
Shell, Ross-B	1	14	....
Shell, Rouse-A	1	8	30
Shell, Rouse-B	3	371	363
Shell, Sebronek	5	2,006	1,958
Shell, Stevens	2	3	....
Shell, Story	1	322	1,257
Shell, Williams	1	72	69
Sinclair, Wilber	3	312	291
Total	35	15,819	17,394

In Southern Counties

Southern part of Oklahoma is quiet. Oklahoma Natural Gas Corp. recently leased a block in Township 3-9w, Comanche County, on which a wildcat test will be drilled in the near future. The test will be in the SW of Section 3-3-9w, and will be drilled to the 4,000-foot level.

The Hewett Field in Carter County reached its height in production in 1921. It is the second largest field in southern Oklahoma and oil production is found in seven different horizons. One of the largest wells completed in the pool was in Section 21-4s-2w, it made 12,800 bbls. initial. The field, in September, 1927, had 801 producing wells making 9,339 bbls. daily. In August, 1929, it had a total of 815 wells making 7,925 bbls. It shows only a small decline in 23 months. It had an increase of 14 wells and a decrease of 1,414 bbls.

Arclo and others' No. 1 Cruce, NE cor. NW SE, Section 35-4s-2w, Carter County, was drilling at 4,724 feet in lime on October 24. Lime was topped at 4,517 feet. Superior Oil Corp.'s No. 1 Nesmith, SW cor. SE SE, Section 2-7s-7w, Jefferson County, was drilling at 3,711 feet in sandy shale, on October 24. It had water at 3,497-3,505 feet. Pierce & Brown's No. 1 Harley, NW cor., Section 30-2s-6w, Stephens County, was drilling in lime at 3,295 feet. Many operators are of the opinion that it is the Viola lime. Carter Oil Co.'s No. 6 Carter-Kearns, SW cor. NE SE, Section 21-3-5w, Grady County, was drilling in sandy shale at 4,706 feet. A new wildcat test is reported to be getting under way in Township 2n-26w, Harmon County, in the southwest corner of the State. A large block of leases has been taken in this area. Chenault & Staley's No. 1 Crane, NE cor. SE, Section 25-4s-14w, southeast Tillman County, was drilling at 1,400 feet. C. E. Riley's No. 1 Indian Land, NE cor. SE, Section 34-4s-14w, Tillman County, wildcat is shut down at 200 feet. Indian Territory Illuminating Oil Co.'s No. 1 fee, in Section 17-6-24w, Greer County, has landed the 12-inch casing at 1,269 feet. It will also run the 10-inch casing at 1,902 feet, the total depth. Helmerich & Payne's No. 1 Hauch, NE cor., Section 23-6-24w, Greer County, is shut down at 1,780 feet, because of motor trouble. Kay & Martin's No. 1 Martin, in Section 32-8-24w, Beckham County, is also shut down at 1,914 feet.

Seminole Pipe Line Runs

The daily average pipe line runs from the Seminole area last week show a decrease of about 17,000 bbls. The runs by companies for the week ending October 24 were as follows:

Company—	Bbls.
Barnsdall	3,850
Champlin	4,309
Continental	580
Consolidated	578
Cosden	11,603
Empire	7,731
Gulf	38,207
Magnolia	12,367
Oklahoma	45,148
Prairie	45,369
Producers & Refiners	843
Pure	3,560
Shaffer	3,026
Shell	8,531
Sinclair	25,946
Texas	18,085
Tidal	19,584
White Oak	2,545
Total	251,862
Tank cars	11,075
Grand total	262,937

Carter County

L. J. Woodruff made location for No. 1 Watkins, NE cor., Section 22-1s-3w. Magnolia Petroleum Co.'s No. 1 Hightower, SW cor. NE, Section 30-1s-3w, is drilling at 2,800 feet. The rig is being built for No. 4 Hightower, NE cor. SW NE, Section 30-1s-3w. Cotton Belt Petroleum Co.'s No. 10 P. Rexroat, NW cor. NE NW SW, Section 10-4s-2w, is drilling at 650 feet. The rig is up for No. 11 P. Rexroat, SE cor. NE NW SW, Section 10-4s-2w.

Cotton County

Wirt Franklin Oil Corp.'s No. 1 Glessner, SE cor. NW, Section 35-1s-10w, is cementing surface pipe. Bi State Oil Co.'s No. 1 Lindsey, SW cor. NE NW, Section 34-1s-10w, has been abandoned at 2,251 feet.

Creek County

Magnolia Petroleum Co. has the rig on the ground for No. 4 Tiger, CNW SE, Section 17-17-7. O. M. Irelan and others' rig is up for No. 2 Smith, CNL SW SE, Section 11-17-10. Pioneer Petroleum Co. and Darby Petroleum Corp. made location for No. 1 Barnett, SW cor. SE NE, Section 18-17-10. Franchott Oil Co.'s No. 32 Kiefer, CWL SW, Section 17-17-12, is rigging up. Laurel Oil & Gas Co.'s No. 2 Williams, NW cor. NE SE, Section 21-16-8, is rigging up. Franchott Oil Co. and Mid-Continent Petroleum Corp.'s No. 12 Carr, NE cor., Section 26-16-9, is a rig. Troy Oil Co. has the rig up for No. 13 Cousins, C E half NE, Section 2-15-11.

Gypsy Oil Co.'s No. 1 Grayson, SW cor., Section 16-19-9, has been completed for 8 bbls. at 2,520 feet in Bartlesville sand topped at 2,490 feet. J. W. Merritt and others' No. 1 Brown, NE cor. SW NE,, Section 27-18-8, is dry and abandoned at 3,356 feet. Regal Oil Co.'s No. 10 Barnett, CEL SW SW, Section 13-18-11, made 5 bbls. in sand 1,446-1,556 feet. Blackwell Oil & Gas Co.'s No. 12 Tiger, NW cor. SE SW, Section 17-17-7, has been completed for 45 bbls. in sand 2,721-65 feet. Shell Petroleum Corp.'s No. 5 Bruce, SW cor. NW NE, Section 10-17-9, made a 50-bbl. well in sand 1,988-2,064 feet. A. B. Ice's No. 8 Fulsom, CWL SW SW, Section 13-17-10, made 60 bbls. in sand 1,898-1,946 feet. Reiter-Foster Oil Corp.'s No. 1 Littlehead, SW cor. SE, Section 17-17-10, produced 45 bbls. from sand 2,092-2,192 feet. Central Commercial Oil Co.'s No. 1 Bucktrot NW cor. SE SW, Section 26-17-10, is dry and abandoned at 2,524 feet.

Grady County

Magnolia Petroleum Co.'s No. 9 Smith, SW cor. SE NE, Section 35-5-8w, is rigging up. Public Service Co. of Oklahoma's No. 3 Dryden, NE cor. SE NW, Section 2-4-8w, is rigging up.

Grant County

Continental Oil Co. and others' No. 3 Frantz, C SW SE, Section 35-28-3w, is a rig under construction. Consolidated Gas & Utility Co.'s No. 1 Shaffer, C NE SW, Section 2-27-3w, has been completed for 60 bbls. in chat 4,235-4,335 feet.

Jefferson County

Simpson & Fell's No. 1 Seay, NW cor. NE SW NE, Section 3-7s-5w, has been abandoned at 1,701 feet. Sigler & McGinley's No. 1 Jones, SE cor. SW NW, Section 16-7s-5w, is a dry hole at 2,267 feet.

Kay County

Wentz Oil Corp.'s No. 17 Mooney, SE cor. NW, Section 17-28-1, has been completed for 100 bbls. after deepening from 2,257 feet to 3,258 feet in silicious lime.

Kiowa County

George Eshelman and others' No. 1 Dittmar, NW cor. SE, Section 18-6-16w, is drilling at 40 feet. Russell & Sloan's No. 1 Miller, NW cor. NE, Section 24-7-17w, has been drilled deeper from 760 feet to 1,515 feet and abandoned. George Eshelman's No. 1 School, NE cor., Section 13-6-17w, made 10 bbls. in sand 451-57 feet. Thomas Medlin's No. 2 Prough, NE cor. SW, Section 18-6-16w, made 2 bbls. in sand 420-23 feet.

Lincoln County

R. W. Willis and others' No. 1 S. Sasser, C NE SW, Section 20-17-3, has been abandoned at 1,500 feet.

Marshall County

Carter Oil Co. moved a machine in for No. 1 Davidson, NE cor. SW NW NW, Section 30-5s-6.

McIntosh County

Western Natural Gas Co.'s No. 1 Coon, NW cor. SE, Section 16-11-17, is dry and abandoned at 848 feet.

Muskogee County

Tidal Oil Co.'s No. 10 Gaines, C NE SW, Section 5-14-18, is shut down at 1,850 feet. M. S. Mussellem's No. 6 Brook, NW cor. NE SE, Section 4-13-19, is a machine. C. H. Lammers and others' No. 1 Muskogee Townsite, Lots 1, 2 and 3, Block 325, SW cor. NW SE NE, Section 35-15-18, is dry and abandoned at 1,196 feet. W. J. Metzger and others' No. 10 Francis, SE cor. NW SW SW, Section 1-14-18, is dry and abandoned at 996 feet. Mazda Oil Co.'s No. 4 Jackson, SW cor. NE SE NW, Section 8-13-16, has been completed for 35 bbls. in sands 1,633-42 feet and 1,644-56 feet. E. Mills and others' No. 2 Kelly, NE cor. SW SW SW, Section 13-13-18, has been completed for 1,800,000 feet of gas in sand 532-54 feet. C. F. Ray and others' No. 1-A Foreman, SE cor. NE SW, Section 14-13-18, has been completed for 2,000,000 feet of gas in sands 548-68 feet and 731-52 feet. H. D. Johnston and others' No. 2 Jordan, NE cor., Section 23-13-18, made 2,500,000 feet of gas in sand 490-512 feet.

Okfuskee County

Fern Oil & Gas Co. has the rig on the ground for No. 2 Turner, C SE SE, Section 24-11-10. Champlin Oil & Refining Co. moved the rig in for No. 1 Fish, NE cor. NW SW, Section 17-11-12. Burke-Greis Oil Co.'s No. 1 Reynolds, SW cor. SE NE, Section 32-11-11, is dry and abandoned at 3,007 feet. E. L. Robinson's No. 1 Rice, NW cor. NE NW, Section 2-10-9, made a 12-bbl. pumper in sand 1,514-21 feet.

Oklahoma County

Indian Territory Illuminating Oil Co. and others made location for No. 1 Jones Community, SW cor., Section 1-11-3w, Oklahoma City Field. Jack Shaffer and others' No. 1 Childs, SE cor., Section 14-11-3w, made 7,457 bbls. from sand 6,330-49 feet. Indian Territory Illuminating Oil Co. and others' No. 2 Button, SW cor. NW SW, Section 19-11-2w, has been completed for 15,983 bbls. from lime at 6,530 feet. No. 1 Fuzzell, SW cor. NW, Section 19-11-2w, made 16,330 bbls. in lime at 6,521 feet. No. 1 Bodine Anderson, NE cor. NW, Section 30-11-2w, made 5,175 bbls. in lime at 6,499 feet. Sinclair Oil & Gas Co.'s No. 1 Stamper, NE cor. SW NW, Section 30-11-2w, has been completed for 9,605 bbls. at 6,646 feet in lime. No. 1 Kinter, NW cor. SE, Section 30-11-2w, drilled to 6,235 feet and made 1,780 bbls. of gasoline.

Okmulgee County

J. A. Swindler's No. 1 Bell, C NW SE, Section 20-15-13, is drilling at 1,165 feet. J. K. Gardner and others' No. 1 Brinton, C SE SE, Section 15-14-13, is drilling at 400 feet. W. B. Pine moved the tools in for No. 5 Bradford, CEL NW SE, Section 19-14-14. C. D. Burns' No. 15 Anderson, SW cor. NW NW NE, Section 35-14-14, is rigging up.

J. H. Rebold's No. 1 Brooks, SW cor. NE, Section 6-15-13, has been completed for 100 bbls. in sand 2,596-99 feet. Kirkland & Son's No. 2 Barnett, SE cor. NE SE, Section 18-15-13, has been completed for 15 bbls. in sand 2,059-85 feet. Hennessey and others' No. 7 Young, C NW

SE, Section 17-13-13, made 34 bbls. in sand 1,602-20 feet. Berry and others' No. 1 Tucker, SE cor. NW, Section 2-13-14 is dry and abandoned at 2,891 feet. A. McInturff's No. 1 Hawkins, NW cor. SE SE, Section 20-12-14, made 3,000,000 feet of gas in sand 2,187-2,222 feet.

Osage County

Kewanee Oil & Gas Co. has the cellar dug for No. 10, NW cor. SE SE, Section 34-27-6. Peters Petroleum Corp.'s No. 8, NE cor. SW SE, Section 22-27-11, is spudding. Lewis Production Co. is erecting the rig for No. 1, NW cor., Section 23-25-7. Peters Petroleum Corp. and Producers & Refiners Corp. made location for No. 2, SE cor. SW, Section 23-25-9. F. J. Carrol's No. 2, SE cor. NW SE, Section 15-24-8, is rigging up. W. D. Gray and others made location for No. 5, SE cor. SW SE, Section 34-24-8. The rig is being built for No. 2, NE cor. NW NE, Section 3-23-8. Oklahoma Power & Water Co. moved a machine in for No. 125, NW cor., Section 9-20-10.

Winona Oil Co.'s No. 7, NE cor. SW SE, Section 20-29-9, has been completed for 40 bbls. in sand 1,512-42 feet. A. G. Oliphant's No. 4, SW cor. NE NW, Section 6-23-9, made 40 bbls. in Bartlesville sand 2,083-2,166 feet. Oklahoma Power & Water Co.'s No. 124 NE cor. NW, Section 9-20-10, has been completed for 138,000 feet of gas in sand 360-68 feet.

Pawnee County

West & Brewer moved the rig in for No. 1-A White, SW cor. SE SE, Section 6-20-8. Sheeders and others' No. 1-A Gifford, CWL SE NE, Section 12-20-8, is drilling at 1,600 feet. Roy Sears and others made location for No. 6 Wiggs, CNL NE NW, Section 35-20-9.

Payne County

Wheeler & Mote made location for No. 1 Funnell, NE cor. SE, Section 4-17-4. Pure Oil Co.'s No. 1 Searcy, NE cor. SW, Section 4-18-5, has been abandoned at 3,662 feet. Shaffer Oil & Refining Co.'s No. 2 Echo Hawk, NW cor. NE, Section 9-18-5, has been completed for 430 bbls. in Wilcox sand 3,573-91 feet.

Pittsburg County

Midwestern Oil & Gas Co. has a machine on the location for No. 1 Knoblin, SE cor. SW NE, Section 11-7-18.

Hughes County

Sinclair Oil & Gas Co.'s No. 1 Tiger "B", SW cor. SE, Section 5-6-8, has been completed for 110 bbls. in Gilcrease sand 2,933-75 feet.

Pontotoc County

Delaney & King made location for No. 2 Smith, NE cor. SE NE, Section 29-5-8, Allen Field. Tidal Oil Co. made location for No. 10 Dawson, SW cor. NW, Section 28-5-8, Allen Field. The Prairie Oil & Gas Co.'s No. 1 Forney, NW cor. SW, Section 28-5-8, is rigging up. Denver Producing & Refining Co.'s No. 1 Burke, NE cor., Section 36-5-4, made 75 bbls. in sand 2,570-2,615 feet. American Oil & Refining Co.'s No. 3 Robertson, NE cor. SW, Section 19-5-5, Bebee Pool, has been completed for 700 bbls. in Viola lime 2,337-85 feet. Transcontinental Oil Co.'s No. 3 Berry, SE cor. NW NW, Section 19-5-5, drilled to 2,403 feet and plugged back to 2,360 feet where it swabbed 30 bbls. McMan Oil Co.'s No. 1 Lane, NE cor. NW, Section 30-5-5, has been completed for 60 bbls. in sand 2,317-2,477 feet. Benedum & Trees Oil Co.'s No. 1 Bullard, NE cor. SE NW, Section 31-5-5, swabbed 50 bbls. from Viola lime 2,482-2,680 feet. Delaney & King's No. 1 Smith, SE cor. NE, Section 29-5-8, Allen Field, made 160 bbls. in sand 841-55 feet.

Pottawatomie County

Mid-Continent Petroleum Corp.'s No. 6 Rogers, NE cor. SW SW, Section 5-9-5, Earlsboro Pool, is a cellar. Hubbell & Graham and others' No. 1 Dobbs, NW cor. SE, Section 8-9-5, is a rig going up. The Prairie Oil & Gas Co. is erecting the rig for No. 1 Meyer, NW cor. SW SE, Section 32-7-4, Pearson area. Payne Drilling Co. made location for No. 1 Bullock, SE cor. SE NE, Section 22-6-3.

Magnolia Petroleum Co.'s No. 2 Richardson, SW cor., Section 15-7-4, St. Louis Pool, has been completed for 475 bbls. in Simpson sand 4,095-99 feet. No. 1 Lynn, NW cor. NE NE, Section 21-7-4, made 500 bbls. from Hunton lime 3,620-95 feet.

Seminole County

Magnolia Petroleum Co. made location for No. 5 Reed, NW cor. NE SW, Section 4-8-7, East Seminole Pool. Location has been made for No. 1 Cudjo, NE cor., Section 24-7-6, Little River Pool. The Prairie Oil & Gas Co. and T. B. Slick's No. 3 Mingo, SE cor. NE, Section 25-6-6, is a rig being built. Sinclair Oil & Gas Co.'s No. 1 Culley, SW cor. NW NW, Section 13-5-7, is rigging up to deepen from 2,672 feet. Mid-Continent Petroleum Corp.'s No. 17 Fleet, NE cor. SW SE, Section 7-5-8, Allen Field, is a rig on the ground.

Carter Oil Co.'s No. 1 McMan, NE cor. SW SW, Section 11-9-6, has been completed for 1,255 bbls. in sand 4,100-21 feet. The Prairie Oil & Gas Co.'s No. 1 Polk, NE cor. NE NW, Section 15-9-8, has been abandoned at 4,575 feet. No. 1 Grisso, NE cor., Section 9-9-6, is dry and abandoned in Wilcox sand 4,357-60 feet. Gypsy Oil Co.'s No. 4 Renton, NW cor. NE NE, Section 11-7-6, Little River Pool, has been completed for 1,392 bbls. in Cromwell sand 3,063-87 feet. Carter Oil Co.'s No. 5 Cotcha, NW cor. SW NE, Section 23-7-6, made 195 bbls. in sand 3,163-3,205 feet. Independent Oil & Gas Co.'s No. 14 Harris SW cor. NW NW, Section 23-7-6, has been abandoned at 3,281 feet. Magnolia Petroleum Co.'s No. 1 Naifer, SW cor. Section 18-7-7, made 15,000,000 feet of gas in Gilcrease sand 3,125 feet, total depth 3,163 feet. Carter Oil Co.'s No. 1 Aldridge, SE cor. SW NE, Section 7-6-8, has been completed for 60 bbls in Gilcrease sand 2,877-85 feet. No. 2 G. Davis, SE cor. SW, Section 7-6-8, drilled to 4,201 feet, plugged back to 4,178 feet and pumped 25 bbls.

Coal County

McGinley & Sigler's No. 1 Wiltsey, NE cor. SW SE, Section 7-2-8, is dry and abandoned at 3,016 feet.

Rogers County

J. E. Sewell has a machine on the location for No. 1 Hawkins, SE cor. NW SE, Section 29-19-17.

Stephens County

Smythe & Nash's rig is up for No. 1 Johnson, NE cor., Section 30-2-8w. Heydrick and others' No. 1 Glenn, SE cor. SW, Section 5-1s-8w, is rigging up. Ven-Mex Oil Co. and Mid-Continent Oil Co.'s No. 9 Nigh, CSL NE NW, Section 34-1s-8w, is a rig. Ellis Drilling Co.'s No. 9 Nigh, SW cor. NW, Section 34-1s-8w, is cementing surface pipe. Carter Oil Co. has built the rig for No. 2 Rucktashel, NE cor. NW NE, Section 11-1s-4w. Pandem Oil Co.'s No. 1 Barber, C SE SE, Section 34-2-9w, has been abandoned at 1,882 feet.

Tulsa County

Mays Brothers' No. 1 Robinson, NE cor. SW SW, Section 19-19-15, is shut down at 1,635 feet. W. E. Brown and others' No. 4-A Oswald, CWL SE NW, Section 6-17-13, is drilling at 1,300 feet. J. E. Martin and others' No. 1-A Hornacker, NW cor. SW, Section 27-17-13, is drilling at 150 feet. T. T. Bingham and William Fleetwood's No. 2 Davis, NW cor. NE, Section 24-17-14, is drilling at 1,050 feet. No. 1 Parker, SE cor. SW NW, Section 24-17-14, is drilling at 1,800 feet. Little Ed Oil Co.'s No. 3 McKim, NE cor. SE, Section 30-17-14, is shut down at 1,435 feet. Scott & Christie's No. 1 Billy, SW cor. SE NE, Section 32-17-14. Wise & Meisner made location for No. 1 Smith, SE cor. NW, Section 28-16-14. E. D. Davis and others' No. 6 Riverbed, CSL SW SE, Section 24-17-14, is dry and abandoned at 1,873 feet.

Wagoner County

I. V. Horner moved a machine in for No. 1 Luckey, SW cor. NE SW, Section 35-18-17. C. W. Gillett's No. 7 McIntosh, CEL NW SE, Section 25-17-16. H. H. Orr's No. 3 Grayson, SE cor. NE SW, Section 34-17-18, is shut down at 437 feet. Keener Oil Co.'s No. 1 Sleener, SE cor. SW, Section 33-17-19, is drilling at 540 feet and making 1,500,000 feet of gas.

Mortimer and others' No. 1 Bates, NE cor., Section 9-18-15, is dry and abandoned at 1,075 feet. J. A. Sherer and others' No. 1 Posey, NW cor. SW NE, Section 5-17-18, has been abandoned at 700 feet. Mitchell Oil Co.'s No. 2 Bruner, NE cor. NW NE, Section 2-16-16, is dry and abandoned at 1,585 feet. J. L. Dixon and others' No. 3 Brown, CSL SW NW, Section 36-16-17, has been completed for 40 bbls. in sand 874-88 feet.

WEST TEXAS FIELDS

(Continued from Page 65)

WEST TEXAS COMPLETIONS
Week Ending October 26
Crane County

Gulf Production Co.'s No. 68 McElroy, located 771 feet south of northeast corner on east line of its lease in Section 200, Block F, C.C.S.D.&R.G.N.R.R.R. Survey, had an initial production of 270 bbls. at 2,870-2,988 feet.

Glasscock County

Sun Oil Co.'s No. 2 Phillips, located 330 feet from south and west lines of Section 14, Block 33, Township 2s, T.P. R.R. Survey, topped the pay at 2,150 feet, was drilled to a total depth of 2,260 feet and had an initial production of 27½ bbls. hourly.

Howard County

Continental Oil Co.'s No. 1 Kloh-Rumsey, located 990 feet south and 330 feet west, NE cor., Section 13, Block 33, Township 2s, T.&P.R.R. Survey, topped the pay at 2,262 feet, was drilled to a total depth of 2,350 feet and had an initial production of 600 bbls. Its No. 3 Kloh-Rumsey, located 1,650 feet south and 330 feet west of NE cor., Section 13, Block 33, Township 2s, T.&P.R.R. Survey, topped the pay at 2,181 feet, was drilled to a total depth of 2,238 feet and had an initial production of 1,626 bbls. Humble Oil & Refining Co.'s No. 5 Clay, located 330 feet from south and 990 feet from west of Section 138, Block 29, W. &N.W.R.R. Survey, had an initial production of 140 bbls. at 1,820-70 feet. Moody Oil Corp.'s No. 18-B Roberts, topped the pay at 1,881 feet, was drilled to a total depth of 1,897 feet, was shot with 40 quarts at 1,881-95 feet and estimated making 20 bbls. on pump. Its No. 19-E Roberts, 190 feet from north and 2,310 feet from east of Section 136, Block 29, had an initial production of 50 bbls. at 1,325-1,413 feet. Simms Oil Co.'s No. 1 Clay, located 330 feet from south and 1,650 feet from west, Section 127, Block 29, W.&N.W.R.R. Survey, topped the pay at 2,910 feet, was drilled to a total depth of 2,924 feet and had an initial production of 30 bbls. hourly.

Irion County

Fox & Miller's No. 1 Tankersley was dry and abandoned at 1,475 feet. Kimbrough & Flinchbaugh's No. 1 Tankersley topped the pay at 1,318 feet, was drilled to a total depth of 1,335 feet and had an initial production of 60 bbls. daily.

Pecos County

Gibson & Johnson's No. 1 Grace, located 330 feet north, 990 feet east, Section 3, Block 179, had an oil show at 1,795-1,820 feet and was dry and abandoned at 2,062 feet. Landreth and World Oil Co.'s No. 1-B University, topped the pay at 1,596 feet, was drilled to a total depth of 1,644 feet, was shot with 60 quarts from 1,602-44 feet and had an initial production of 160 bbls. Their No. 2-B University, Section 13, Block 18, topped the pay at 1,602 feet, was drilled to a total depth of 1,622 feet and had an initial production of 752 bbls. The Texas Company's No. 1 McDonald, NE cor. SW, Section 46, Block 12, was dry and abandoned at 1,635 feet. Tidal Oil Co.'s No. 2 McDonald, located 330 feet from south and east lines of S half NW, Section 46, Block 12, was dry and abandoned at 1,520 feet. McMan Oil & Gas Co.'s No. 9-C Smith, located Section 25, Block 194, G.C.&S.F.R.R. Survey, topped the pay at 1,648 feet, was drilled to a total depth of 1,682 feet and had an initial production of 165 bbls. Mid-Kansas and Transcontinental Oil Co.'s No. 3-E Yates topped the pay at 1,087 feet, was drilled to a total depth of 1,166 feet and had an initial production of 145 bbls.

PROSPECTING PERMITS EXTENDED TWO YEARS

DENVER, Colo., Oct. 28.—On government land in Lincoln County, Wyoming, and several other possible oil areas in Rocky Mountain district prospecting permits have been extended for two years by Secretary of the Interior Wilbur under an agreement which provides that only one well be drilled on a structure during the first year. The effect of this arrangement is to do away with the necessity of each permittee drilling on his permit, when only one well is necessary to prove up a structure. It is not designated as group development but it meets one of the principal objections to the Interior Department order of March 12, last, which resulted in rejection of applications for prospecting permits then pending.

Recently some applications for permits then automatically canceled have been reinstated and permits granted, but only in limited numbers and confined to areas where geological work has been performed and where acreage applied for was needed to complete a block. No applications for prospecting permits are being received by the Government and the public domain remains closed to all who had not initiated their plans at the time the order went into effect.

Unit development of proven areas such as Hiawatha Field in Wyoming and Colorado, where there is a necessity for providing long and dependable supplies of natural gas for expensive pipe line projects, is being permitted, along with unit development of some producing oil fields in Rocky Mountain states, such as Elk Basin and Grass Creek, where the Government owns oil land.

OKLAHOMA NATURAL GAS GETS NICHLOS PROPERTY

Thomas R. Weymouth, president of the Oklahoma Natural Gas Corp., announced conclusion of negotiations under which the natural gas producing properties in the Chickasha Field owned by the Oklahoma Gas Utilities Co., John B. Nichlos, president, and those of the Oklahoma Natural Gas Corp. in that area are to be consolidated and taken over by a new company to be managed and controlled by the Oklahoma Natural Gas Corp.

"The merging into one corporation of the Grady County gas reserves owned by the Oklahoma Gas Utilities Co. and the Oklahoma Natural Gas Corp.," said Mr. Weymouth, "creates a vast reserve of natural gas for the benefit of Oklahoma consumers."

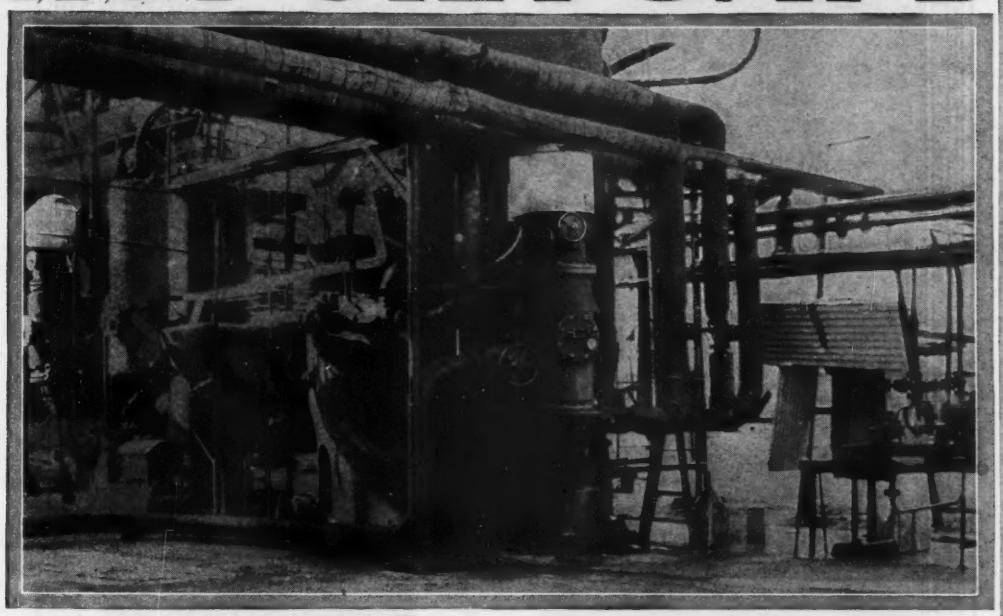
MOODY FOR GAS LAW

AUSTIN, Tex., Oct. 26.—When the legislature meets in special session next January, Governor Moody will request it to enact a law which will prevent the waste of natural gas in Texas. It is probable a law similar to that in effect in California will be proposed. Governor Moody already has called the attention of the oil and gas division of the Railroad Commission to the waste of gas.

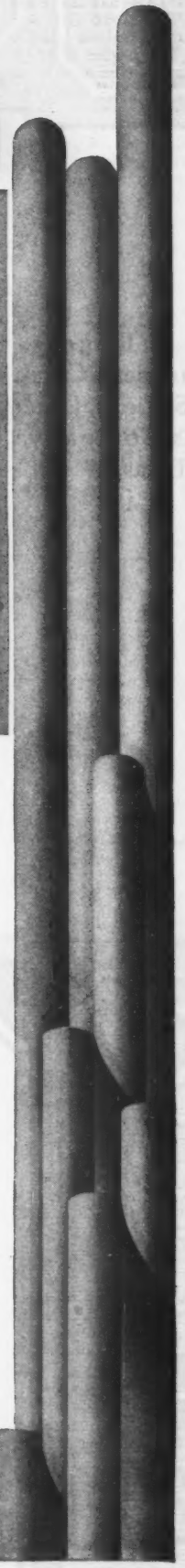
NEW VENEZUELA WELL

Colon Oil Corp. announces that the Colon Development Co., Ltd., its subsidiary in Venezuela, has brought in a new well in Tarra Field, No. T-42, producing at the rate of 635 bbls. per day through 1-inch flow-plug, casing pressure 250 pounds, tubing pressure 125 pounds. Colon's production of four wells in Tarra Field, under test during the week ended October 19, amounted to 23,000 bbls.

INVERTO HOT OIL PUMPS



This scene in a Texas refinery shows two Byron Jackson Inverto Hot Oil Pumps with top drive. The one in the foreground is used in conjunction with a Stratford Fractionating Tower, and the one in the background, to the left, is connected to a Braun Cooler. Motors are protected from rain by sheet iron hoods. Just below the motor hood is the hand wheel, by means of which the packing gland is externally controlled. The pump is completely enclosed in a steel casing. The compactness and safety of this equipment is obvious. Byron Jackson manufactures not only special equipment for refineries but also centrifugal pumps for every conceivable service in the oil industry.



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Possible engine hours
Hours operated
Per cent operation
Average Suction Pressure
Average discharge pressure
Fuel used
Gas compressed
Oil used
Fuel per M gas compressed
Gas compressed per engine day
Total pay-roll
Rated H. P. hours per gal. oil

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MEN who turn the searchlight of analysis on operating records and on actual experiences of users invariably recommend the purchase of Cooper engines and compressors.

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ENGINES

Central West Wells Are Above Average

Every Division Represented in Completion List Although None in Gusher Class. Four in Hancock County, Ohio

By Whit
Staff Correspondent Central West Fields

FINDLAY, Ohio, Oct. 28—All divisions of the Central West Field were represented by completions during the past week and while none is in the gusher class a number are above the average producers for old territory that has been picked over more or less for more than 30 years. Most of the new wells are on leases where power plants are already installed, cutting the cost of new power plants etc., and add quite a little production to the older strippers.

In the old Lima Field of northwestern Ohio, Hancock county has four new wells completed. In Liberty Township, L. Cramers' No. 3 well, 200 feet from the south line and 600 from the west line of the John Pank farm, on the oil map as the M. Bish farm, SW, Section 32, produced an initial of 57 bbls. the Trenton being topped at 1,323 and drilled 57 feet in to a total depth of 1,390 feet. N. and M. Harpst got a 15-bbl. initial producer in No. 4 well, 800 feet from the south line and 250 from the east line of the John K. Schoonover, NW, Section 29, at a total depth of 1,335 feet, or 70 feet in the sand. In Eagle Township, same county, Star & Clark's No. 15 well, 600 feet from the south line and 200 from the west line of the Allice Stauffer farm, on the oil map as the Noah Foltz farm, NW, Section 5, which topped the sand at 1,320 feet and went 60 feet in to a total depth of 1,380 feet, produced an initial of 20 bbls. and B. Porter and others' No. 29 J. H. Haley farm, on the old oil map as Jacob Powell, SE, Section 5, same township, produced 15 bbls. the first 24 hours from a total depth of 1,380 feet, or 65 feet in the sand which was topped at 1,315 feet. There still remains considerable undeveloped territory where small wells can be found in Hancock County as well as Allen County and in fact such is the case in any of the old producing counties in the Lima Field.

Allen County

In Allen County, Bath Township, northeast of Lima, B. L. Carmon and others' No. 3 well, 250 feet from the south line and 750 from the east line of the E. T. McCarey, in the north half of Section 13, pumped 15 bbls. with sand topped at 1,366 feet. drilled 45 feet in the sand and the total depth of hole was 1,411 feet. Eugene Roalman's test in the northeast corner of the J. Rumbaugh, Section 14, same township, topped the sand at 1,338 feet, went 34 feet in where the oil pay was found, then to a total depth of 1,372 feet. In Marion Township, same county, Stallkamp and others' test 1,500 feet from the south line and 25 from the west line of the Stallkamp heirs farm, SE, Section 12, was a dry hole. The Trenton in this well was topped at 1,210 feet and at 47 feet in the sand to a total depth of 1,257 feet, fresh water was encountered in the sand, and listed as a failure.

Sandusky County has another producer above the average in the Gibsonburg Oil Co's No. 4 well, 1,250 feet from the south line and 200 from the west line of the Edith Fought farm, NE, Section 11, Washington Township, and near Lindsey, produced an initial of 30 bbls. with sand topped at 1,283 feet, and 53 feet in the sand to a total depth of 1,336 feet.

In the Tiffin Field, in Hopewell Township, Seneca County, Brown and Barrett's test in the northeast corner of the Sarah Brown farm, on the oil map as the P. Grummel farm, NW, Section 25, was a duster. Top of sand in this hole at 1,606 feet and drilled 150 feet into the sand to a total depth of 1,756 feet. W. J. Poyser and others' No. 3 on the Homer Martin, Section 25, Liberty Township, same county, is reported a gas well estimated around 200,000 feet, making the second gas well on the farm, one being an oil producer.

CENTRAL OHIO

Twenty-six completions were reported from the Central Ohio fields since the last review, with 12 oil wells with an initial production of 128 bbls.; 6 dry holes and 8 gas wells, while in new work started there were 14 locations made and 27 wells started drilling operations, a total of 41.

Two wildcats under way in Scioto County are attracting attention but have not made a very encouraging showing as far as the drills have gone. In Browning Bros'. test on the Wesley Caudill farm, Section 21 Porter Township, the top of a sand was found at 1,014½ feet to 1,152½ feet, total depth, 1,308 feet. Both top and bottom of sand was shot with 2,500 pounds. No indications of gas or oil were discovered, and the hole may be drilled to a greater depth in hopes of finding something worth while. Wagner and Matthews' test on the Herr & Adams farm, Lot 59, Green Township, same county, shot the shale with 2,900 pounds top shot at 1,100 feet, bottom shot at 1,400 feet, showed approximately 25,000 feet of gas, and is cleaning out at the total depth of 1,400 feet. Undecided whether to go deeper or not.

In Ashland County, Orange Township, the Ohio Fuel Gas Co's No. 1-4798 Walter Lewis, Section 29, and No. 1-4797 Esther M. Irvin, Section 28, are both gas wells. No. 2-4877, same farm, is drilling and the same company made a location on the P. J. Hess, Section 28, same township. Same company's No. 1-3607 I. J. Rumbaugh, Section 21, Jackson Township, is also a gas well. In Greene Township, same company made a location for a second test on the Marie Jones, Section 20. In Lake Township, Robinson and others' second test on the Albert Strang Section 15, was a dry hole from the Berea at 638 feet, and their No. 4 H. C. Young, Section 22, was also a dry hole at 557 feet. Same firm is drilling No. 1 on the Mathias Kopp, Section 16. Golden Crown Oil and Gas Co. is drilling a second test on the Harry Horn, Section 21, and John Neading and others are drilling on the George Horn, same township. In Mohican Township, Meltzer and others' No. 4 Michael Ott Sr., farm, Section 34, is dry from 722 to 746 feet.

Lorain County

In Lorain County, Carlisle Township, J. W. Cushing is drilling on the W. M. Richards, Section 12.

In Wayne County, Chester Township, Harmon and George have a gas well on the G. E. Snyder, Section 36, in the Berea sand from 613 to 616 feet, and are drilling No. 1 on the Chas. Mark, same section. Faulkner and others are drilling on the Albert Snyder, same section. In Paint Township, the Ohio Fuel Gas Co., made a location on the D. J. L. Miller, Sections 20 and 21.

In Holmes County, Prairie Township, the Ohio Fuel Gas Co's No. 1-3037 J. A. Baker farm, Section 18, has a very nice gas volume and produced an initial of 65 bbls., and will make an 8-bbl. producer. I. E. O'Hail is starting No. 4 on the P. M. Young farm, Section 16, Knox Township. Ohio Fuel Gas Co., is drilling No. 1-4890 Levi Yoder, Section 29, Paint Township.

In Cuyahoga County, Hulse & Kundtz are starting No. 1 on the Theodore Kundtz, Lot 63 Brecks Township.

In Knox County, Union Township, the Upham Gas Co. is drilling a second test on the John and Louisa Lower farm, Section 23. Same company made a location for No. 8 on the Rebecca J. Kunkle, Section 6, Brown Township, and is drilling deeper No. 3 E. Workman, Section 8 same township. I. E. O'Hail made a location on the R. P. Hipp, Section 21, Jefferson Township, same county.

In Coshocton County, Pike Township, the Pure Oil Co's test on the W. L. Norris, Section 12, produced 25 bbls. at 3,245-89 feet. Ohio Oil Co. made a second location on the Otto Aiken, Section 34, Clark Township. Bell Brothers' test on the John Hall, Section 9, Tuscarawas Township, is credited with being a 10-bbl. producer from 857 to 895 feet. Ohio Fuel Gas Co. has a fair showing of gas in No. 1-3582 on the Jesse Grant, Section 12, Monroe Township, and also a 30 bbl. oil producer at 3,501-48 feet. Same company made a location for No. 1-4788 on the Lester Pretzeno, Section 6, Crawford Township, same county.

Summitt County

In Summitt County, Greene Township, Morgan, Hogue and others' second test on the Sam Harring, Section 17, is a fair gasser in the Newburg sand at 3,635-50 feet. In Franklin Township, the East Ohio Gas Co. is drilling No. 2 Frank H. Mason farm. Section 13. Wiser Oil Co., made a location on the William Matenas, Section 19, Copley Township.

In Licking County, Fallsburg Township, the Emerald Petroleum Co's No. 6 James E. Martin, Section 9, is credited with an initial of 14 bbls. from 789 to 799 feet, while the same company's No. 5 John A. Little, Section 8, was a dry hole at 2,910-60 feet. H. C. Farmer's test on the Bernard Warfel, Section 7, Parry Township, produced 2 bbl. from 660 to 672 feet. Hope Construction and Refining Co. is drilling No. 3 Sarah Rector, Section 9. In Franklin Township, Bishop, Deetry and Patton's No. 2 Geo. E. Cotterman, Section 11, is reported at 4 bbls., from 720 to 727 feet, and Armstrong & Lytle's No. 15 K. W. L. Motherspaw, Section 12, rated at 3 bbls. from 688 to 695 feet. Bishop, Deetry and Patton have started No. 3 Geo. E. Cotterman, Section 11. H. C. Farmer is drilling No. 2 Bernard Warfel, Section 7, Perry Township. Heisey Gas Co. is drilling on the John C. Sidle, Section 5, Licking Township. Hope Construction & Refining Co. made a location for a second test on the Mary Fleming, Section 13, Hanover Township.

In Athens County, Ames Township, the Ohio Fuel Gas Co. has a gas well in No. 1-4811 on the Horson Ahle, Section 6, in the lower Berea sand from 1,587 to 1,600 feet, total depth, 1,610 feet. Same company is drilling No. 5-4860 on the L. G. G. Glasiner, Section 8, same township. Same company drilled a dry hole in No. 1-4922 on the W. W. Blackwood, fractional Section 7, Carthage Township, in the upper Berea sand from 1,688 to 1,702 feet, total depth, 1,704 feet. Same company has a gas well in No. 1-4856 H. A. Pinkerton farm, fractional Section 56, in a stray sand from 700 to 707 feet, and in Lodi Township. Clifford & Glazier are drilling on the Robert Smith Jr., farm, Section 11, Cannon Township.

In Meigs County, Sutton Township, the Preston Oil Co's No. 3-1347 Nial Salser farm, Section 24, pumped 2 bbls. from the upper Berea sand at 1,767-86 feet, total depth, 1,790 feet. Tyree and others' No. 8 Mary Jividen, Section 23, pumped 5 bbls. from the same formation at 1,676-92 feet. No. 9 same farm, is drilling. Same parties are drilling a second test on the Stanley Holter, Section 13, and No 4 W. R. Lott, Section 24. R. C. Miller and others' No. 4 W. B. Cross farm, Section 17, produced 5 bbls from the upper Cow Run sand from 576½ to 593½ feet. Pure Oil Co. is drilling No. 6 W. J. Krider, Section 24, and the Southern Ohio Petroleum Co. is drilling No. 1 John Carnahan, Section 11. In Salisbury Township, F. Leifhart and others are drilling on the Frank A. Hawk and others' farm. Section 36. H. F. McTaggart and others are working at a test on the W. and N. Saxon, Section 18, Rutland Township.

Jackson County

In Jackson County, the Ohio Fuel Gas Co. has a gas well in No. 1-3566 on the Martha McKinnis, Section 25, Washington Township, in the Clinton Lime at 2,647-54 feet, total depth, 2,669 feet. Same company is drilling No. 2-4868 Geo. W. VanFossen, Section 11, Franklin Township, and made a location for No. 1 on the Peter Radcliff Lot 120, Lick Township.

In Stark County, Lawrence Township, the Penn Oil and Gas Co. is drilling a second test on the Phil Moke, Section 4, and F. A. Brendall and others are drilling on the Chas. Smith, Section 3.

In Fairfield County, Pleasants Township, the City Natural Gas Works is drilling No. 3 John Martz, Section 14.

In Guernsey County, Cambridge Township, the Ohio Fuel Gas Co's No. 1-4810 Chancy M. Oldham, Section 3, is credited with 20 bbls. initial. This well topped the Niagara 3,250 feet, and found the pay at 3,384-87 feet. In Westland Township, the Cambridge Gas Co. found a dry hole in No. 3 on the A. Kerr, Section 10, Westland Township. In Wheeling Township, the Ohio Fuel Gas Co. made a location on the Simon Umstatt, Section 2.

In Belmont County, Union Township, Frank Stranges and others are drilling No. 3 on the Cassius C., and Wm. Shepherd farm, Section 21.

In Harrison County, North Township, the Kemrow Oil & Gas Co. is drilling on the C. E. Curant, Section 31.

In Morgan County, Marion Township, W. C. McBride Inc., drilled in a light gas well in No. 5 on the Marion Mills, Section 25, at 1,690 feet. Bowman Oil & Gas Co. are drilling No. 3 Alex Mimgus, Section 32. In Penn Township, the Kemrow Co's No. 2 Mary E. Glassford, Section 11, is a fair gasser at 1,708 feet. Choquill & Co., are drilling No. 13 C. H. Archer, Section 15. Foraker and others have a light gas well on the Lyman L. Mealick, Section 27, York Township.

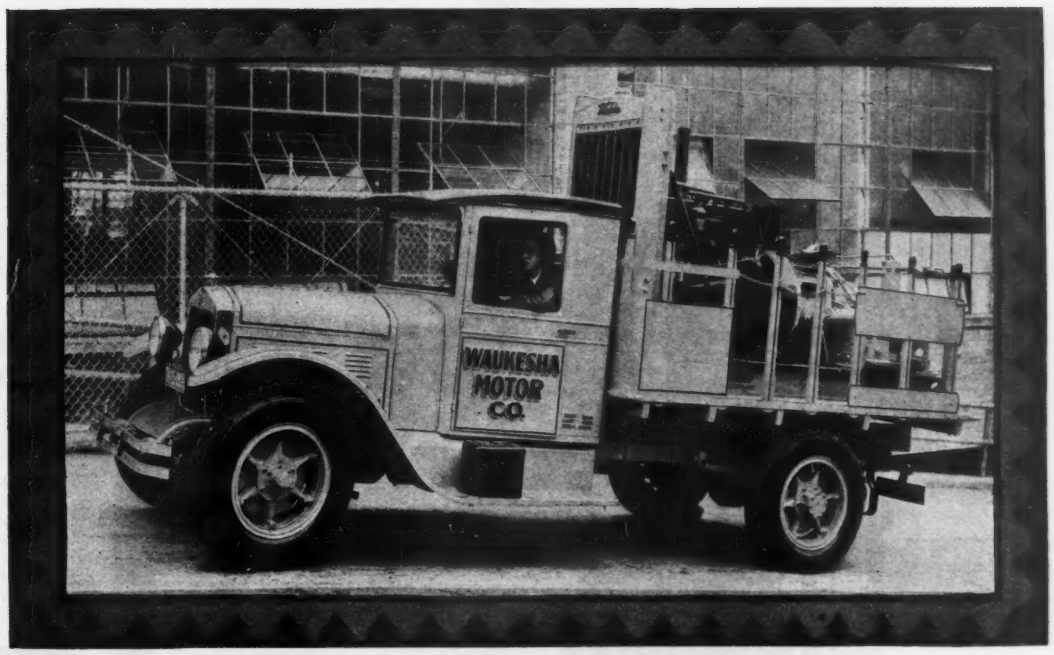
INDIANA

Only two completions were reported from the Indiana fields, but both are above the average producers for the State. One is owned by Pierce and others in the northwest corner of the F. E. Shattuck farm, SE, Section 32, Prairie Township, Vigo County and showed an initial of 40 bbls. from a depth of 2,236 feet. Four other wells in the same township are getting down towards the producing sands. Ohio Oil Co's No. 1 W. C. Piety farm, same section; Hamil & Dill's No. 1 Prevoe & Frake farm; Siosi Oil Corp's. No. 3 on the Lena Thomas and another on the Wm. Risgs Farm, all in Section 22.

The second completion is Robertson and others' test in the northeast corner of the Byron Preston farm, NW, Section 30, Washington Township, Pike County, which also produced an initial of 40 bbls. at a total depth of 1,135 feet. The top of the sand was found at 1,125 feet and 10 feet of pay sand.

Sanford F. Lent, a resident of Owen County, near Freedom, Indiana, writes his opinion that oil can be found in that county, if some one would make a try to find it. Freedom is near the southern part of the county and almost directly west from the production found in north-

(Continued on Page 101)



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Taking the finished product to the *prospective* user

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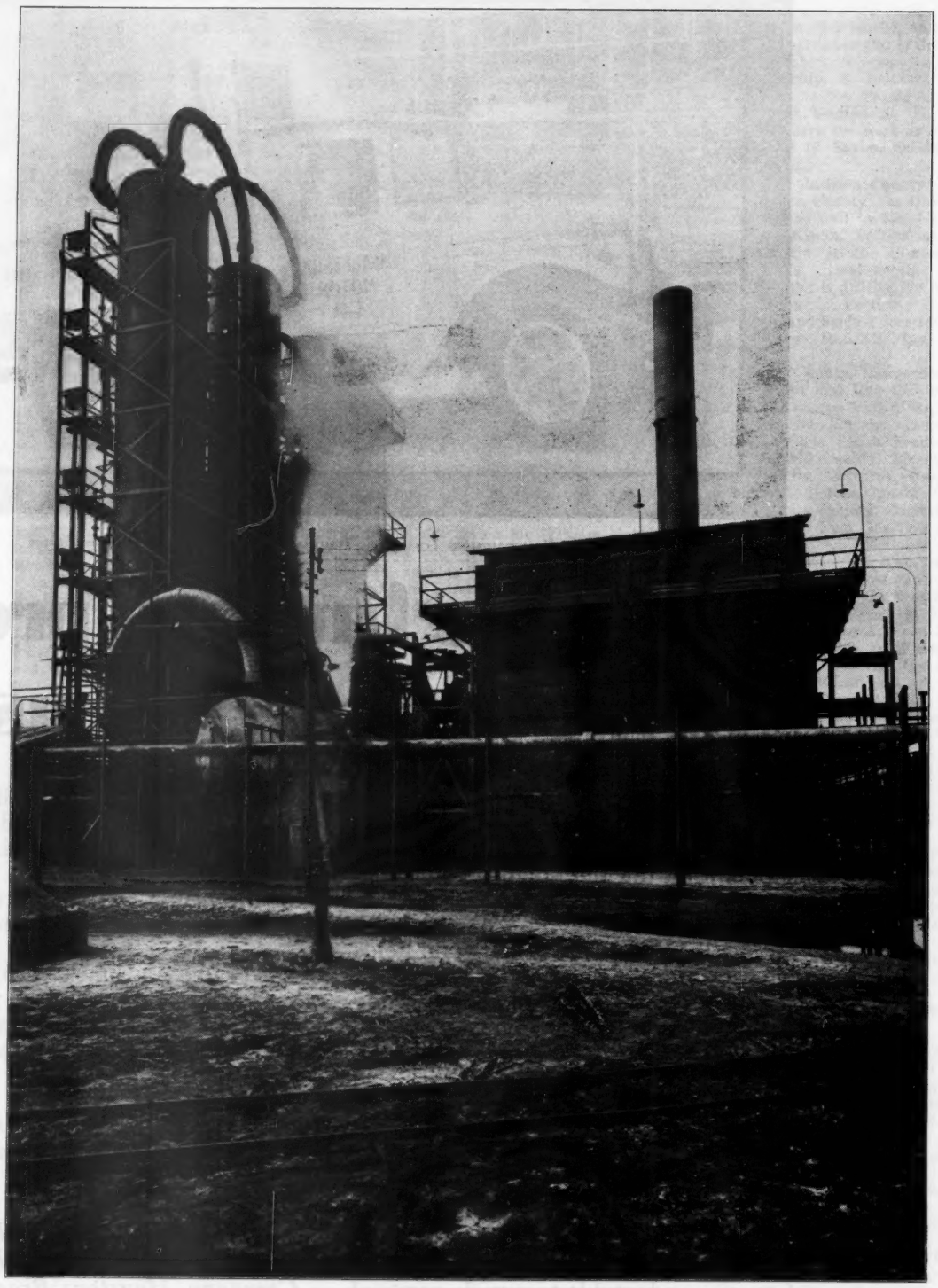

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-in Roumania

THE Pipe Still Distillation Unit, shown on the opposite page, expresses the flexibility as well as the world-wide scope of McKee service to the Refining Industry. Two of these units were installed at the refineries operated by an English company which has been producing and refining in Roumanian territory for many years.

In addition to the obvious difficulty of construction work in a foreign land, the installation of these units presented several problems not ordinarily met with in refinery construction.

There are several available Roumanian crudes, each with a wide variation in characteristics; and it was necessary that each of these units should be designed to process all of these crudes.

Roumanian markets require many products to very close specifications. The lighter products, such as gasolines and naphthas, have much closer ranges and are more in number than similar products in this country.

While each unit was complete within itself, it was necessary that it should "tie-in" with existing equipment. This demanded complete coordination, both in design and fabrication, between American and European practice.

Owing to the wide variation of available crudes, some of the bottoms are processed for lubricating properties; while the bottoms of other crudes are sold as fuel oil.

One of these units has a capacity of 7,000 barrels per day, while the other has a capacity of 4,000 barrels. Both of the refineries are located at Ploesti, Roumania.

Altho most of the special equipment, such as heat exchangers, special pumps, temperature control apparatus, special valves and tubing, was shipped from the United States this work was erected, ready for operation, within twelve months after the signing of contracts.

In operation these units are producing the various products, of the required market specifications, with yields which equal or exceed the laboratory distillation of the crudes.

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More and Better Completions in East

Southeast Ohio Brings in Several Producers Above Average and West Virginia Has Two Best in Several Months

By D. S. Wakenight
Staff Correspondent, Eastern Fields

PITTSBURGH, Pa., Oct. 28.—Development work in the eastern fields showed some improvement during the past week. More and better wells were completed. It had been almost a month since the deep sand territory in Southeast Ohio had completed anything better than light pumpers. The West Virginia fields furnished two producers better than the average size of the wells that have been coming in for some months. Nearly all of the work under way is located within defined limits and scarcely anything is expected better than light pumpers.

SOUTHEAST OHIO

In Section 6, Jackson Township, Muskingum County, the Pure Oil Co. completed and shot in the Clinton sand a second test on the Otis McKee farm. It produced 135 bbls. the first 24 hours.In Section 20, Newcastle Township, Coshocton County, the Preston Oil Co. completed and shot in the same formation a second test on the Sanford McClain farm. It produced 120 bbls. the first 24 hours. In Lot 37, Hardy Township, Holmes County, the East Ohio Gas Co. completed in the Clinton sand a test on the Evalina Smith farm, which flowed 50 bbls. the first 24 hours.

In Section 20, Newcastle Township, Coshocton County, the Preston Oil Co. completed and shot in the Clinton sand a second test on the Sanford McClain farm. It produced 135 bbls. the first 24 hours. In Section 37, Hardy district, Holmes County, the East Ohio Gas Co. has completed a test on the Winfield Spyers farm which produced 50 bbls. the first 24 hours after shot in the Clinton sand.

In the SE of Section 11, Sutton Township, Meigs County, the Southern Ohio Petroleum Co. has a duster in the Cow Run sand on the John Carnahan farm. In the same section R. A. Tyree & Co. have a 3-bbl. pumper in the Berea grit on the Cooper heirs farm. In the SW of Section 13, O. B. M. Tyree has started to drill on the Stanley Holter farm. In Section 18, the Preston Oil Co. is drilling a second test on the Mary Davis farm. In Section 11, John M. Hazlett has started to drill another test on the Belle Spencer farm. In the NE of Lot 1,317, Sutton Township, the Pure Oil Co. has started to drill on the Krider heirs farm. H. B. Goddard & Co. are drilling on the A. E. Carnehan farm.

In Section 20, Bethel Township, Monroe County, Henry Berger's No. 6 on the Riley heirs farm is a 15-bbl. pumper in the Squaw sand. In Section 5, Harrison Township, Perry County, the Ohio Fuel Gas Co. has a gasser in the Clinton sand at a second test on the John Larzett heirs' farm.

Medina County

In Lot 2, Section 12, Chatham Township, Medina County, the East Ohio Production & Refining Co. has a 25-bbl. producer at No. 8 on the Steven and Anna Jelencsics farm. In Lot 3. Section 10, same township, the O. K. Oil & Gas Co. has a 10-bbl. pumper at No. 30 on the Sandford-Watson farm.

In Section 16, Ludlow Township, Washington County, Homer Newhart and others have a light pumper in the Berea grit at No. 3 on the C. F. Payne farm.

In the NW of Section 23, Clayton Township, Perry County, Ralph Brothers, Inc., have a duster in the Clinton sand on the Almer Simons farm. In Section 6, Fallsbury Township, the Trinway Oil & Gas Co. has a gasser in the Berea grit at a second test on the Abner Glass farm. In the SE of Section 8, Fallsbury Township, Licking County, the Emerald Petroleum Co. has a duster in the Clinton sand at No. 3 on the Sarah J. Little farm. In Section 10, Short Creek Township, Harrison County, the Harrisville Oil & Gas Co.'s test on the R. Mercer farm is a duster in the Berea grit.

In Section 20, Bethel Township, Monroe County, the Sylvania Oil Co. has a 2-bbl. pumper in the Squaw sand on the Kinsey heirs' farm. In Section 10, Franklin Township, the Preston Oil Co.'s test on the Bert Mallet farm is a 5-bbl. pumper in the Big Lime formation.

In Section 5. Paint Township, Holmes County, the Ohio Fuel Gas Co.'s test on the Mary Shrock farm is a Clinton sand gasser good for 500,000 feet. In Section 19, Lee district, Athens County, the Three Way Oil Co. has a light pumper in the Berea grit at a test on the Marcum estate.

Licking County

In Section 3, Hanover Township, Licking County, the North Fork Oil Co.'s No. 9 on the J. C. Williams farm produced 18 bbls. the first 24 hours after drilled into the Berea grit. In Section 2, Perry Township, W. J. McClay & Co. have completed in the Clinton sand No. 2 on the Betty and Olive Hoover farm. It produced 15 bbls. the first 24 hours and is a gasser good for 1,000,000 feet.

In the SE of Section 2, Featner & Co. have a 5-bbl. pumper at No. 5 on the John Featner farm. In Section 10. Franklin Township, Monroe County, the Preston Oil Co.'s test on the Henry Mallet farm is a 5-bbl. pumper in the Big lime formation.

In the Firsher Pool, in Lot 117, Athens Township, Athens County, Gross & Febault have a light pumper in the Berea grit on the W. E. Baker farm. In Section 75, Liberty Township, Washington County, Albert Jahn and others have completed a light pumper in the Cow Run sand on the Jennie Pool farm. In Section 35, Newport Township, the Parsons & Sweeney Oil & Gas Co. has a 2-bbl. pumper at No. 5 on the Isaac Mendenhall farm.

WEST VIRGINIA

In Henry district, Clay County, the Virginian Gasoline & Oil Co. completed in the Big Injun sand No. 22 on the Brown, Swan & Goshorn tract, estimated good for 15 bbls. a day. The location is 600 feet south of No. 9 on the same tract. On Tanners Creek, DeKalb district, Gilmer County, the Hope Construction & Refining Co. completed in the Big Injun sand a test on the Earl Hardman farm. It was formerly a producer in the Maxon sand and is now a light pumper in the lower formation.

In Central district, Doddridge County, Broadwater & Wilson have completed a test on the J. H. Zinn farm. It is dry and abandoned. On Bull Fork of Tanners Creek, DeKalb district, Gilmer County, the McCall Drilling Co. has a duster in the Big Injun sand on the J. W. Cunningham farm. In Otter district, Braxton County, the United Gas Co. has the rig completed for a second test on the Israel Slagel farm.

Lincoln County

In Duval district, Lincoln County, the United Fuel Gas Co. has a gasser at No. 5973 on the Horse Creek L. & M. tract. In Carroll district, the Allegheny Gas Co.'s test on the W. M. King farm is a gasser in the Berea grit. In Sheridan district, J. B. Kingery & Co.'s test on the Nettie Browning farm is a gasser in the same formation.

In Scott district, Boone County, the Mountain State Fuel Co. has a gasser on the J. B. Prince farm. In Washington district, the Owens Bottle & Machine Co. has a Berea grit gasser on the Lewis Bias farm. In Grant district, Doddridge County, Trainer Brothers have a Big Injun sand gasser on the Lucas Davis farm.

In Liberty district, Marshall County, the Valley Oil & Gas Co.'s test on the Phillip Justice farm is a 4-bbl. pumper in the Gordon sand. In Church district, Wetzel County, the Pure Oil Co. has a Gordon sand gasser at No. 2 on the W. C. Cole farm.

Calhoun County

In Sherman district, Calhoun County, the Virginian Gasoline & Oil Co. has completed in the Big Injun sand a 5-bbl. pumper on the Eva D. Hathaway farm. In Union district, Wood County, M. T. Bennett & Co. have a gasser on the Patrick O'Brien farm.

In the same district, the Valley Mills Oil & Gas Co. has a gasser at a second test on the W. E. Sugden farm. In Murphy district, Ritchie County, the Hope Natural Gas Co.'s No. 7,421 on the I. A. Gainer farm is a gasser in the Big Injun sand.

In Glenville district, Gilmer County, the Pittsburgh & West Virginia Gas Co. completed No. 7,553 on the C. P. Snyder farm. It is a gasser in the Big Injun sand.

In Scott district, Boone County, the Owens Bottle & Machine Co. has a gasser at No. 18 on the Cassingham farm. In the same district, the same company has a gasser on the Hiram Donagler farm. In Sherman district, the Pure Oil Co.'s No. 37 on the L.R.P. Tract A, is a 15-bbl. pumper in the Berea grit. In the same district, the Owens Bottle & Machine Co. has a gasser at No. 7 on the Peytonia Coal & Land Co.'s property. In Washington district, the same company has a gasser in the Berea grit at a second test on the J. K. and Oliver Ballard farm. The same company has also a gasser on the A. J. Guarr farm. In Butler district, Wayne County, the Chartiers Oil Co. is drilling on the John Saylers farm.

Wood and Clay Counties

On Bear Run, Union district, Wood County, the Bennett Oil Co. completed a test on the Hugh O'Brien farm. It was given two shots and shows very little oil. In Union district, Clay County, the United Fuel Gas Co.'s No. 8,442 on the Brown & Goshorn farm is a gasser in the Big Injun sand. It is on Elk River, 1,000 feet northwest of the Hamilton Gas Co.'s second test on the Bratton Samples farm. In Sheridan district, Calhoun County, G. W. Hamilton and others have completed a test on the Mattie Blackshire farm, located on the Kanawha River. It is a gasser in the Maxon sand good for 250,000 feet.

At Valley Mills, Union district, Wood County, the Valley Mills Oil Co. completed a second test on the William Sugden farm. It is a fair gasser in the Salt sand. In Magnolia district, Wetzel County, the H. M. C. Oil & Gas Co.'s test on the Joseph Carpenter heirs' farm is dry in the Big Injun sand.

In Cove district, Doddridge County, the Philadelphia Oil Co. has completed a test on the Miller heirs' farm. It is on Bear Fork of Cove Creek and is a light gasser. On Big Run of Cove Creek, Troy district, Gilmer County, C. M. Bennett & Co. have a 500,000-foot gas well at No. 3 on the H. B. Keister farm.

Kanawha County

In Poco district, Kanawha County, the Chartiers Oil Co. has completed a duster on the Daniel Shaffer farm. In Big Sandy district, the United Fuel Gas Co.'s No. 3,879 on the Queen Land Co.'s tract is a gasser.

(Continued on Page 174)

STRAY PRODUCING SAND NOT FOUND IN TWO BARNETT CREEK POOL WELLS

By Whit
Staff Correspondent, Kentucky-Tennessee

OWENSBORO, Ky., Oct. 28.—The Barnett Creek Church Pool, one of the richest found for a long time in the western area of Kentucky, has the trade stumped to some extent, as the Stray sand which gives up such large wells was not found in a couple of wells in the north part of the pool. No. 7 of the Cumberland Petroleum Co. failed to show any oil in the Stray sand but will be drilled deeper, and the Rex-Pyramid Oil Co. got a very light producer in the north part of the rich Sallie Hoover lease. While there is considerable talk over the two wells they mean nothing in the development of Kentucky acreage and only condemn about ground enough to set a derrick. Some remarkably fine producers have been found in the pool since the last review.

Outside capital is reported looking over the Barnett and other pools southwest of Taffey, in Ohio County. P. A. Rowe, one of the early operators in the Owensboro-Hartford-Pellville Field, which constitutes what is known as the Tri-County Field, and R. J. Brewton, of Chicago, who has also been looking over the field, have made inspections of several of the large oil interests. Reports have been given out that a syndicate of Chicago men was negotiating for production in the field. No confirmation could be obtained from any of the operators mentioned as being interested. Dr. L. C. Young, Miller and Dameron and C. E. Daugherty and others, operating pools at Utica and Red Hill in Daviess County and in northern Ohio County, have been given as holding production desired by the Chicago interests.

Interesting Find

One of the interesting finds of the week is in McLean County, where it looks like the Ohio Oil Co. had a real oil well on the George McManama farm, 3½ miles northeast of Calhoun. Shortly after the well was shot it flowed a full stream of the casing for a short period. This is No. 4 on the lease, and much the best looking producer. The well was found at a depth of 1,320 feet. The ground surrounding the well is covered with oil, and the well also has a nice gas pressure.

Another well that may mean the extension of another pool in northern Ohio County is James C. Ellis and others' test on the George Burdett farm, north of the Deanfield Pool, and opens up what shows for a new pool. The well found its oil at 295 feet and when put on the pump, produced 30 bbls. the first 24 hours. The well is 2 miles north of production.

Week's Work

A summary of the week's work in the Kentucky fields shows 28 completions,

(Continued on Page 101)

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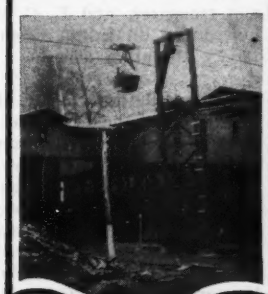

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MEN KNOWN IN OILDOM

David Donoghue

One of the best known geologists in the State of Texas is David Donoghue, who recently resigned as one of the board of directors, in charge of the land and geological departments, for the Texas Pacific Coal & Oil Company at Fort Worth, Tex., to take the position of executive assistant to E. H. Salrin, president of the Tidal Oil Company with offices in the same city.

Mr. Donoghue was born in San Antonio, Tex., in 1891, and was graduated from St. Mary's College there. He received his B.S. degree in geology from the University of Texas, going with the Gulf Production Company in the geological department shortly after his graduation, in 1913. He was with this company until 1922 when he transferred to the Marland Oil Company of Texas, later leaving that company to do consulting work.

In March, 1925, he joined the geological staff of the Texas Pacific Coal & Oil Company, becoming head of the land and geological department where he remained until October 1, 1929, making the transfer to the Tidal Oil Company at that time.

Mr. Donoghue has worked many square miles of geology in the days when the horse and buggy was the most practical and best mode of travel to "the wide open spaces," and although he has made many aerial reconnaissance trips he says that the plane is too speedy for picking up details of the terrain over which they travel, although it is the best way to travel when a fellow is in a big hurry.

PERSONAL PARAGRAPHS

R. S. King, oil operator of Fort Worth, Tex., has returned home from a business trip to Denver, Colo.

* * *

L. E. Hults, independent operator, has returned to Fort Worth, Tex., from a business trip to East Texas.

* * *

John B. Sheehan, of Tulsa, president of the Sheehan Construction Company, and Mrs. Sheehan, are on an eastern trip.

* * *

Beman G. Dawes, chairman of the board of directors of the Pure Oil Company, and Mrs. Dawes, have returned from Europe.

* * *

J. D. Thompson, Jr., formerly with the Gulf Production Company, has opened offices as a consulting geologist in Amarillo, Tex.

* * *

George S. Buchanan, geologist, has returned from a trip to southern Oklahoma points in the interest of the Tulsa Oil Company, Tulsa.

E. B. Oilley, district chief scout, Atlantic Oil Producing Company, of San Angelo, Tex., was in Fort Worth, Tex., a few days on business.

* * *

H. W. Wolfe, representative of the Parkersburg Rig & Reel Company at Denver, Colo., announces the arrival of a baby girl at his home.

* * *

Ed Campbell, who has been spending a three months' furlough at Petrolia and Oil Springs, Ontario, left recently via New York for the Peruvian fields.

* * *

F. E. Powell, chairman of Anglo-American Oil Company, arrived in New York on his semiannual business trip in connection with his company's American activities.

* * *

E. A. Satchell, general superintendent of the Lago Petroleum Corporation, who has spent many years in the Venezuelan oil fields, recently arrived in London on vacation.

* * *

N. A. C. Smith, superintendent of the Petroleum Experimental Station of the United States Bureau of Mines, Bartlesville, Okla., announces the arrival of a baby boy at his home.

* * *

K. R. Kingsbury, president of the Standard Oil Company of California, was in southern California last week but has subsequently returned to the home office in San Francisco.

* * *

R. G. Bechtel, field superintendent of the Dixie Oil Company, operating subsidiary of the Standard Oil Company of Indiana in Michigan, was a recent visitor to the Mid-Continent fields.

* * *

H. C. Fowler, acting chief engineer of the United States Bureau of Mines, has been in Bartlesville, Okla., at the experimental station there for about two weeks going over the work of the station.

* * *

Sam G. Baggs, secretary-treasurer of the Oil and Gas Association of Alberta, has resigned the position owing to pressure of business interests. H. Sawley of Calgary has taken over the position.

* * *

D. L. Harper, of the New York office of the Standard Oil Company of New Jersey, visited in Tulsa last week. He also visited the Colorado School of Mines at Golden, Colo., where his son is a student.

* * *

Clinton H. Longshore, vice president of the Richfield Oil Corporation of New York, has sailed for a trip to England and the continent. Mr. Longshore will look into the foreign oil situation while abroad.

* * *

Carl B. Anderson, chief geologist for the Johnson Oil Refining Company, who with Mrs. Anderson and their two children, spent two months in the Muskegon, Mich., district, has returned to his home in Tulsa.

* * *

H. B. Heath Eves, a director of the Anglo-Persian Oil Company and of a large number of its associated companies, left London for a prolonged tour in South Africa and other parts of the African continent.

* * *

W. H. Eyssen, of San Angelo, Tex., and Miss Bouge Sears, of Merkel, Tex., were married in Marietta, Okla., Friday evening, October 18. Mr. Eyssen is an independent oil operator of San Angelo, Tex.

* * *

R. H. Carr, chief engineer for the Pure Oil Company, has been making an extended trip through southern Texas, Arkansas, Louisiana and Oklahoma fields and is returning to his Chicago office via Tulsa this week.

* * *

W. W. Spreng, manager of the petroleum sales department of E. I. du Pont de Nemours & Company, Inc., has been making an extensive trip over the Mid-Continent area accompanied by H. H. James and E. Long, sales representatives.

* * *

Ralph B. Dempsey, assistant superintendent of the Imperial Oil, Ltd., refinery at Sarnia, Ontario, has resigned owing to ill health, and with his family will leave shortly for San Diego, Calif. Mr. Dempsey was 12 years with the company, 3 years at Regina and 9 years in Calgary.

P. M. Miskell, of Tulsa, manager of the refining department of the Empire Oil & Refining Company, and Mrs. Miskell were visiting in their old home in Bradford, Pa., last week.

* * *

V. de Metz, J. de Montlebert and A. Dragulanescu, of the Steaua-Romana (Bucharest), are touring the more important oil fields of the United States and studying modern conditions and equipment.

* * *

W. S. (Billy) Ackerman, assistant to E. C. Earl of the Associated Oil Company's pipe line department, is recovering from a confining illness of several weeks and is expected to be in the harness soon.

* * *

H. E. Brandli, vice president and general manager of the Cities Service Export Oil Company, has returned to the New York headquarters of the company after a visit to Mid-Continent and Gulf Coast points.

* * *

Allen C. Balch, of the Southern California Gas Company, and Mrs. Balch, sponsored the construction of the "Balch Halls for Women" at Cornell University, the building of which was recently dedicated.

* * *

E. H. Cunningham Craig, consulting petroleum geologist of London, England, arrived recently in Calgary to make an inspection of various oil fields in Alberta for British interests. He is planning to spend a month in Alberta.

* * *

T. C. Skeen, of the executive staff of the Columbian Steel Tank Company of Kansas City, Mo., is at his home in St. Louis after about four months spent in various fields in the Mid-Continent districts in the interests of his company.

* * *

H. A. Gray, succeeding C. J. Van Landeghem as manager special industries department, the Philip Carey Company, Lockland, Ohio, and R. B. Hall, manager oil industries department of the same company, Dallas, Tex., were recent visitors to Tulsa.

* * *

George M. Cook, formerly director of public relations with the Standard Oil Company of Indiana for seven years to the beginning of this year, has been appointed to a similar position with the Grigsby-Grunow Company, manufacturers of the Majestic raido.

* * *

Thomas B. Romine, who has been located in Great Falls, Mont., for two years as geologist for the Texas Pacific Coal & Oil Company, has been promoted to the office of assistant chief geologist of the company and will make his headquarters in Fort Worth, Tex.

* * *

President E. G. Seubert of the Standard Oil Company of Indiana; Allan Jackson, vice president in charge of sales; Charles Barkdull, vice president and treasurer, and L. C. Welch, in charge of the lubricating oil sales, recently made a tour of the Rocky Mountain area.

* * *

N. D. Gillett, formerly of Whiting, Ind., has assumed the managership of the Standard Oil Company of Indiana tank farm at Muskegon, Mich., succeeding A. W. Bredlow, who has been transferred to the River Rouge plant near Detroit as manager. Mr. Gillett has been employed with Standard oil companies for 20 years. After 10 years service at Whiting, Ind., he was transferred to the Imperial Oil, Ltd., of Canada, and was stationed at Vancouver, British Columbia, for six years.

* * *

R. Van A. Mills, formerly Petroleum Engineering Editor of The Oil and Gas Journal, sends a rather interesting letter of his present experiences in Edmonton, Alberta, Canada, where he is located as vice president of the Hudson's Bay-Marland Oil Company, Ltd. Evidently wild game is most plentiful for he says they are living largely upon venison, ducks and prairie chickens. To indicate how plentiful prairie chickens are in that locality he says a big prairie chicken has been roosting on a second story windowsill of his house all day and they have not taken the trouble nor had the heart to disturb him. Mr. Mills sends his best wishes to his many friends and it would seem that those who are interested in wild game hunting and have petroleum business to attend to might well plan their trip to Canada at this season of the year.

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has so few parts; is of such simple construction; is so easily and quickly dissembled and assembled; passes in and out of casing or pipe so freely.

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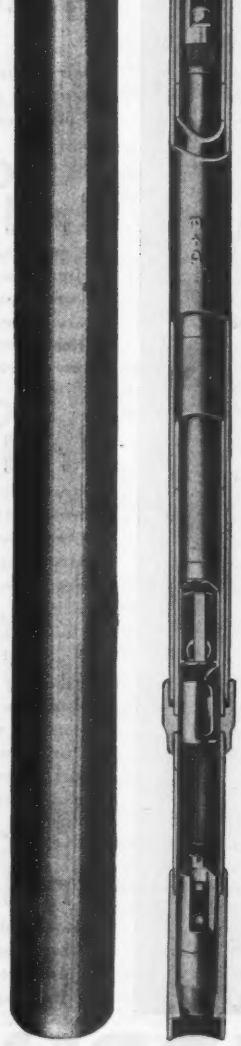

D + B Plunger ends are accurately threaded for plunger bushings. Plungers are packed in specially constructed containers insuring perfect condition when delivered to customer. Made according to A. P. I. sizes and designations.

Tubing manufactured by the Timken Steel and Tube Company of Canton, Ohio.

Outside diameters are turned by means of a special turning device which prevents internal stresses and strains becoming set up in the structure of the steel.

Ground successively thru three precision grinders to desired sizes, the tolerance divergence being not in excess of one ten-thousandths of an inch.

Illustration to the left shows a D + B Parker Style Pump embodying a D + B Heavy Wall Plunger.

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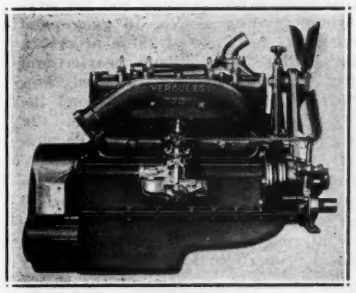
EQUIPMENT AND SUPPLIES

NEW ENGINE SERIES IS OFFERED BY HERCULES

To meet the growing demand for heavy-duty power in the lower horsepower ranges, the Hercules Motors Corp., Canton, Ohio, has developed the OO series of four-cylinder engines. Built in three models, the OO series engines embody the characteristics of the Hercules OX series of which they are smaller models. The OO engines are not designed for a single purpose, but are developed for universal application.

The OOA, OOB and OOC models, which comprise the OO series have bores of 3½, 3¾ and 4 inches, respectively, and a common stroke of 4½ inches. They are identical in general design and most of the parts are interchangeable among



the different models, the only difference being in the bore sizes and the parts affected thereby. All the models develop maximum torque at 1,000 revolutions per minute and peak at 2,200 revolutions per minute.

Special consideration has been given to valve cooling. The water is conducted from the water pump directly across and through the block and distributed into a passagle immediately between the valves and the cylinders. The valves are thus completely surrounded by water. As a further aid to valve cooling, the valve guides are brought up close to the valve heads, more quickly to dissipate the heat absorbed in the heads.

The water pump, of the high pressure, centrifugal type, is of improved design and capable of providing ample circulation for engine cooling at all speeds. The fan is driven by a pulley located directly on the front end of the crankshaft.

Lubrication is full force feed. The pump is located beneath the center main bearing and driven from the camshaft by spiral gears. The shafts and gears of the oil pump are case hardened, insuring long life to this unit. Oil pressure can be adjusted easily to suit operation requirements.

Crankshaft ventilation is provided by a breather cap located directly over the accessory drive shaft. This opening also serves for filling the oil sump.

As in all Hercules engines, the OO series models have the crankcase cast integrally with the block. The crankshaft is 2 inches in diameter at the three main bearings, of which the front is 2 7/8 inches long, the center 2¼ inches long, and the rear 2⅝ inches long. The connecting rod bearings are 2 inches in diameter and 1½ inches long.

The pistons are of cast iron and carry three rings above the pin. The lower of these rings is an oil-regulating type. The rings of all the OO engines are three-sixteenth inch wide with a turned face that operates on the smooth surface of the carefully honed cylinders. Piston pins are of nickel molybdenum steel and are 1 inch in diameter. Each pin is securely locked in its connecting rod by a clamp bolt, and operates in two hard cast bronze bushings in the piston. Connecting rods are of the H section shape and have a center-to-center length of 8 inches.

MARLEY SUPERHEATERS EFFECT MANY SAVINGS

The Marley steam superheater, manufactured by the Marley Co., Kansas City, Mo., is intended for installation in a horizontal position at the rear of the boiler and replaces the rear arch. Its heavy cast headers rest upon the two side walls. The entire unit is elevated above and away from the boiler rear tube sheet. Cast iron cover plates as standard equipment, provide a suitable base for covering the unit with insulating material.

They can be installed easily and cheaply on either new or old boilers, according to the manufacturers. Few changes to setting or piping are required. No changes are necessary to piping beyond boilers.

Marley steam superheaters are said to make an appreciable saving in fuel and to eliminate difficulties and risks caused by water or moisture in high pressure steam lines. The capacities of existing power plants can be increased and plant operation benefited. This is particularly noticeable in the ability of engines, pumps and other equipment to carry greatly increased loads because of decreased cylinder condensation and resultant improvement in lubrication.

Many economies result from the use of superheated steam. Fuel bills are reduced. An overloaded boiler will be capable of carrying greater load. Oil refinery installations have indicated that superheaters on four to five boilers are equal to an additional boiler. Lubricating costs are reduced, the manufacturers say; wet steam is eliminated and steam pressure piping losses and furnace maintenance are minimized.

PRESCOTT GETS PUMP ORDERS

The Prescott Co., Menominee, Mich., recently shipped several large pumps to the Standard Oil Co. of New Jersey for installation at the company's properties in Venezuela, South America, for loading tank steamers. It also has received a large order from the Shell Petroleum Corp., St. Louis, Mo., for pipe line pumps.

NAYLOR PIPE HAS NEW ENGINEERING FEATURES

Naylor Spiralweld pipe, made by the Naylor Pipe Co., Chicago, involves new engineering features. A spiral lock-seam truss welded to the wall of the pipe provides a mechanically correct structure which gives maximum structural strength with minimum weight—an important point in saving freight and handling charges.

The Naylor spiral lock seam, electrically welded by the Naylor process results in a continuous spiral truss with a strength four times the thickness of the wall. The structure provides a cushion to absorb loads and take care of normal expansion and contraction in each pipe joint.

The Naylor Spiralweld truss structure is sufficiently strong with a proper factor of safety to permit the use of Naylor pipe for the working pressures recommended.

Naylor pipe structure, reducing the weight of standard pipe 50 per cent, is enhanced in life against rust and corrosion by building it of an alloy iron which will resist disintegrating forces. Naylor pipe is made of Toncan iron, product of the Central Alloy Steel Corp. When rust and corrosion are not a factor, Naylor pipe will be furnished when desired of copper bearing or open-hearth steel.

Toncan iron is an alloy of refined iron, copper and molybdenum. It has the natural corrosion and rust resistance of iron fortified by the properties of copper and molybdenum.

BRAKE LINING FIRM EXPANDS

F. A. Gerrard, Pacific Coast manager for the Russell Manufacturing Co., with headquarters in San Francisco, announces another Rusco factory branch, at 1223 South Olive Street, Los Angeles, Calif. Kenneth L. Shaw of the San Francisco office has been made Los Angeles manager. Complete stocks of Rusco woven brake linings, Durak brakeshoe liners, clutch facings, plates, fan belts, etc., will be maintained.

CRANKCASE OIL MAKES HIGH-GRADE LUBRICANT

The McNabb Oil & Refining Co., Denver, Colo., has acquired the exclusive United States rights to the activated animal carbon process for the refining of crankcase oil. The company is negotiating for the acquisition of a large acreage containing producing wells, the oil from which is said to be especially adaptable to the activated animal carbon process.

It is the announced intention of the company to install a refinery on the land now under consideration and its expansion program calls for construction of refinery units in important cities of the United States where crankcase oil is available for refining purposes.

The discovery of a large body of animal carbon in Wyoming is responsible for the refining method now known as the activated animal carbon process. Several years ago a large deposit of carboniferous material was opened up about 10 miles south of the Union Pacific line near Wamsetter, Wyo. A German chemist identified as an animal carbon identical with a deposit in the Ruhr district, Germany, used in the manufacture of dyes. Chemists trying to produce various dyes from the Wyoming deposit accidentally discovered that this animal carbon when in an activated form was a perfect catalyzer for oils.

Experiments with various oils have been going on for several years and tests have demonstrated that the activated animal carbon process in the refining of crude, lubricating and refuse oils produces a lubricating oil of superior quality. Oils treated by the activated animal carbon process possess great resistance to deterioration and to temperature change and these improvements are made without changing the gravity, flash or fire. Viscosity is reduced, making a more fluid product with a tougher film.

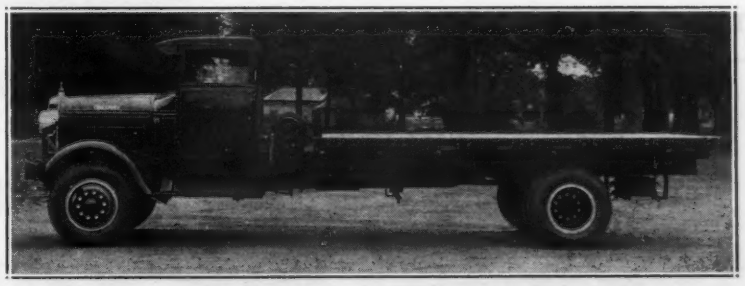
The owners of this deposit in Wyoming constructed a refinery unit in Denver for the treatment of crankcase oils. A high grade standardized product has resulted from this treatment and the oil is being marketed.

THREE WRAPPING MATERIALS

The Dearborn Chemical Co., Chicago, is sending out small specimens of three types of wrappers manufactured by it. No-ox-id-ized fabric wrapper (brown) was developed as a waterproofing product, used largely for wrapping insulating material in sweaty places where the action of moisture, acid and alkali destroys the insulating properties. This wrapper was also the first type used on underground pipe lines to protect the undercoating of No-ox-id from various soil actions. No-ox-id-ized fabric wrapper (gray) has added physical and chemical properties, meeting conditions unheard of at the time of development of the brown wrapper. Through the activities of various groups investigating and co-operating with Dearborn laboratories and engineering departments, the third specimen, No-ox-id-ized asbestos felt wrapper, was developed. It is the contention of many that a wrapper of mineral base, properly treated, is superior for underground application. Dearborn's treatment of the asbestos felt gives a wrapper that is flexible and waterproof. According to the manufacturers, it never dries to a cracking point and does not become powdery under alternating wet, dry, hot or cold exposures.

"Improved Spartan Products for Oil-field Drilling" are described in a bulletin of unusual attractiveness in point of typography and printing, published by the Spartan Steel Co., Compton, Calif.

SPECIAL OIL-FIELD TRUCK IS MADE FOR CONTRACTOR



Gramm Motors Co., Inc., of Delphos, Ohio, manufacturer of motor trucks, has completed a special truck for Thomas J. Bickerton, Jr., Monongahela, Pa., contractor and driller for oil and gas wells. The truck is a 4-ton "O" series, Model 47 Special, having 216-inch wheelbase instead of 200-inch. It has a 4⅜ by 4¾-inch six-cylinder Continental motor, with eight-speed transmission. A multispeed power takeoff drives the winch, giving the winch eight forward speeds and two reverse-gear speeds.

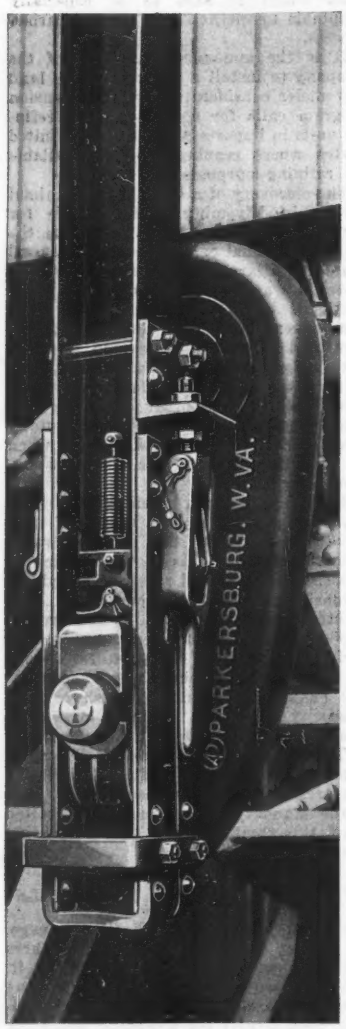
The body is a platform type. The front carries tool boxes 42 inches long, 16 inches wide and 18 inches deep, hung underneath the body. The platform of the body is directly over the tool compartment, which is placed between the first three crossbars of the body. The under side of the body is covered with copper-alloy sheet steel for weather protection. Directly under the frame sills of the body is a hardwood oak flooring, making a tool compartment 82 inches wide for carrying long bars and other tools of that character.

The weight of the complete chassis empty on the front wheels is 5,630 pounds, on the rear wheels 6,460 pounds, a total net chassis truck weight of 12,090 pounds. The truck chassis with a cab will weigh 8,890 pounds, the winch will run 800 pounds and the body 2,400 pounds, making the total of 12,090 pounds. The width overall is 96 inches, the length overall is 327 inches, and the height to clear is 98 inches.

EQUIPMENT AND SUPPLIES

STEEL PITMAN IS MADE FOR DRILLING SERVICE

The Parkersburg Rig & Reel Co., Parkersburg, W. Va., is introducing a new steel pitman especially designed for drilling service. It is of H-beam construction and is designated as the Parkersburg type HB. Features said to mark this new product are a self-oiling, self-aligning bearing and quick and easy removal from the wrist-pin.



The lower half of the bearing pivots on a fulcrum pin. The upper half is held on the wrist pin through tension and may be released quickly by the lever on the side. The self-aligning feature eliminates strain and stress resulting from weaving of the walking beam in motion.

The type HB pitman is available for use with all standard wrist pins and is adjustable for various lengths.

BUYS INTERSTATE'S BUSINESS

F. J. Griffiths, chairman of the Central Alloy Steel Corp., Massillon, Ohio, has announced his company's acquisition of the entire property, assets and business of the Interstate Iron & Steel Co., Chicago. This adds approximately $17,000,000 to the assets of the Central Alloy Steel Corp., making a total of more than $92,000,000. The aggregate ingot capacity of the Massillon company with the addition of Interstate's 396,000 tons, will be 1,938,000 tons. Central Alloy plans to develop and expand the Interstate properties.

SCALINA DESIGNED TO MEET SCALE PROBLEMS

Scalina Cutter, for internal combustion engines, and Scalina Breaker, a one-tank system of breaking cooling water, are offered by the Rathbun Co., El Paso, Tex., as solutions for problems arising from scale-forming water.

If the water jackets, flanges, pipe connections and pipes of an internal combustion engine become clogged or heavily coated with scale the engine will overheat and cause loss of power, with danger of burning out the cylinderhead, pistons, etc. Use of Scalina according to directions, relieves this condition, according to the manufacturer, resulting in a clean, cool engine, giving more power.

Scalina Breaker is a chemical preparation to "break" or soften the water to which it is added. The quantity to be used is determined by a chemical analysis of the water, revealing the amount and nature of solids contained in it. This product precipitates the solid content to the bottom of the tank, thereby preventing it from going through the circulating system of the engine. As a rule, 8 to 10 pounds of Breaker will treat 1,000 gallons of water, and it is only necessary thereafter to add sufficient Breaker, in the same proportion, to treat fresh water added to that already in the tank. Scalina Breaker is characterized as a preventive and not a cure. An engine whose circulating system is in bad condition should be cleaned with Scalina Cutter before commencing the use of the Breaker, the Rathbun Co. says.

STEEL FOUNDERS GET REPORT

At a meeting of the executive committee of the Steel Founders Society of America in New York, Granville P. Rogers presented an extensive report on conditions in the steel foundry industry in the United States and Canada, compiled after an exhaustive survey. It is planned to widen the use and sale of all types of steel castings. John E. McCauley, president of the Steel Founders society announced that a resume of the report as approved will be presented to the entire industry at a special meeting to be held in Chicago the last week in October.

HERCULES MOTOR DOES GOOD WORK IN RUSSIA

A tribute to the performance of Hercules engines, manufactured by the Hercules Motors Corp. of Canton, Ohio, is recorded by the Trade and Industry Gazette, official Russian publication, in reporting a recent test run of a new heavy-duty truck of Soviet manufacture.

"The Yaroslavl automobile factory recently tested a new model of 3.5-ton truck, so-called type YA-5," says the Russian periodical. "This machine is equipped with the American Hercules motor. During the test the machine traveled from Moscow to Yaroslavl and back, a total distance of 550 kilometers. The average speed on the trip was 50 kilometers per hour. The amount of gasoline used for 100 kilometers, with a load of 3.5 tons, was 37 kilograms; that of oil, 1 kilogram for 500 kilometers."

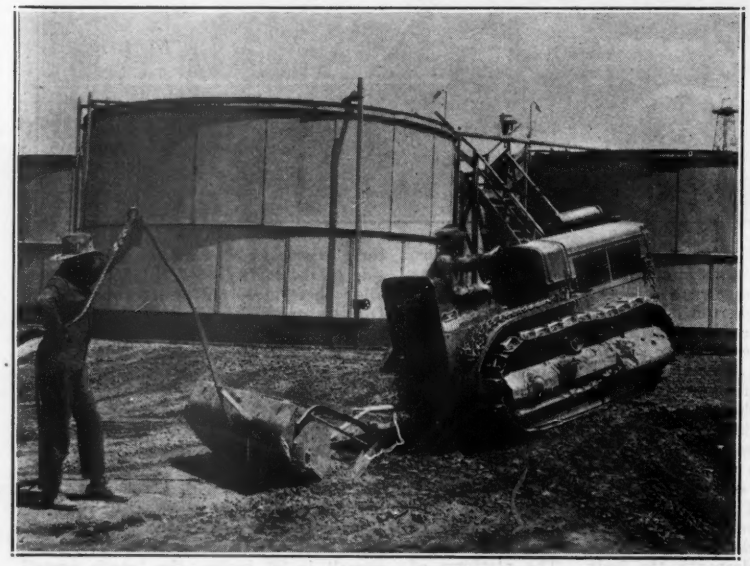
At times 80 kilometers (49.7 miles) an hour was maintained over roads which at their best do not compare with American highways. The article mentions that a model equipped with a motor of German make could develop an average speed of only 40 kilometers per hour.

According to Saul G. Bron, chairman of the board of directors of Amtorg, the Hercules engines to be used in the Soviet nical assistance in the construction of heavy automobile truck engines in the Soviet factory in Yaroslavl. The Hercules Motors Corp. is filling an order for 1,700 Hercules Motors Corp. is to give tech-YA-5 trucks, with shipments going to Russia on regular monthly schedules. Later the Hercules company, according to Mr. Bron, will supply the Soviet Automobile Trust with necessary drawings and other technical data and will send its engineers to the U.S.S.R. to assist in designing and manufacturing engines. Besides this, Soviet engineers will study various phases of production of motors in the Hercules plant.

OPEN OFFICE IN TULSA

The Struthers-Wells Co., of Warren, Pa., division of the Struthers-Wells-Titusville Corp., has opened an office in Room 503, Exchange National Bank Building, Tulsa. C. B. Lynde, district engineer, is in charge.

TRACTOR COMES IN HANDY ON MANY OIL-FIELD JOBS



Caterpillar Twenty, belonging to the Union Oil Co. of California, working on a terrace in the Domingues oil field.

TYPE S METAL RESISTS MANY CORROSIVE MEDIA

The Weldite type S welding rod, made by the Fusion Welding Corp., Chicago, is designed primarily for welding the air-quenching austenitic chrome nickel alloy steels by either the metallic arc, carb-o-flux or oxyacetylene processes. It may be employed, however, on a variety of chrome and chrome nickel alloys, both rolled and cast.

Weldite Type S metal is an alloy steel containing approximatety 18 per cent chromium, 8 per cent nickel and is low in carbon. It is available as a specially flux coated metallic arc electrode for welding No. 14 gauge and heavier and as a carbo-o-flux welding wire for No. 14 gauge and lighter material. It is also available as a bar welding rod for oxy-acetylene welding of No. 16 gauge and heavier. By ali three of these processes, it is possible to weld both heavier and lighter than the gauges specified, but, as attempts are made to go beyond the limits indicated, difficulties from the commercial standpoint may be encountered on certain jobs.

Type S metal remains austenitic, regardless of the rate of cooling. Extremely drastic quenching, of course, may introduce internal strains but, as a rule, the physical properties of Type S metal may be changed only by cold work, which hardens it and by annealing, which softens it. It is essentially nonmagnetic and therefore suitable for certain electrical equipment, such as transformers. Type S metal does not tarnish in the air and is highly resistant to a long list of corrosive media, such as nitric acid, the organic acids, etc. It also resists scaling up to a temperature of about 1,800 degrees Fahrenheit.

BUSINESS NOTES

The Wagner Electric Corp., St. Louis, Mo., has moved its Milwaukee sales office and service station from 501 Broadway to 525-27 Broadway and its St. Louis sales office from 505 Shell Building to 909 Plaza Olive Building.

The Russell Manufacturing Co., Middletown, Conn., has received a contract to supply a large automobile manufacturer with its new Rusco clutch spider and assembly.

The Standard Supply Co., organized by W. C. Lehman, formerly of Los Angeles, has started business in Calgary, Alberta, dealing in oil well supplies.

J. Frank Ward Jr. has been appointed district manager of the Gardner-Denver Co. Tulsa office succeeding A. R. Flournoy who has been made district manager in Los Angeles. G. V. Leece, former manager of the Los Angeles office, has been appointed oil fields sales manager and moved to the home office in Quincy, Ill.

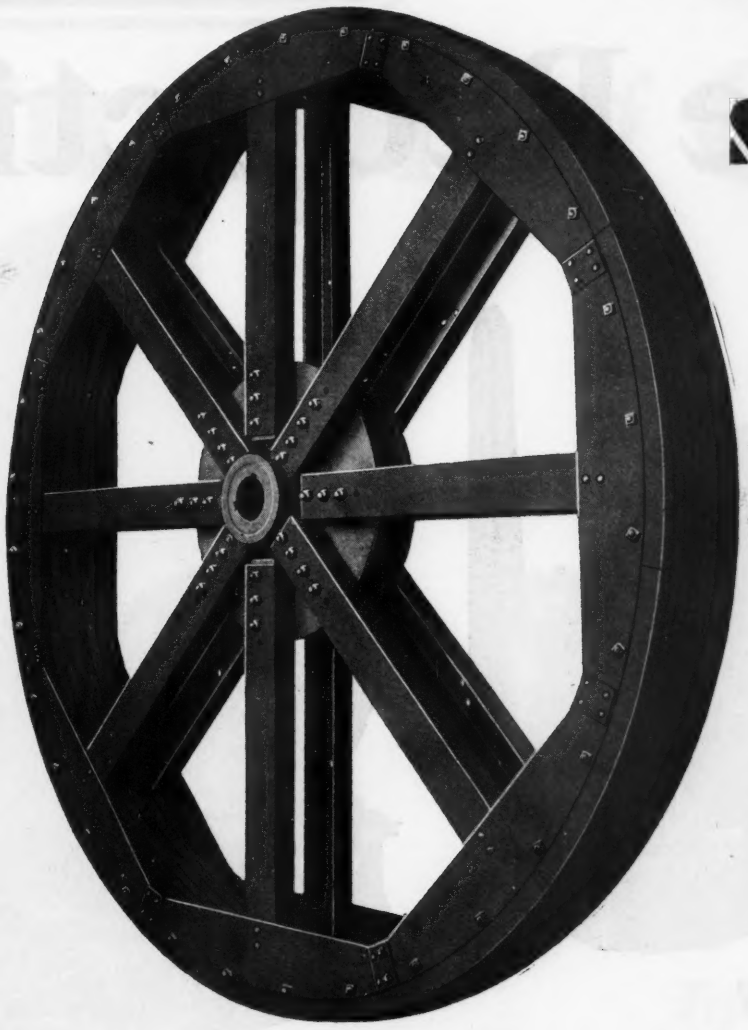
The South Texas district office of the Parkersburg Rig and Reel Co. has been moved from Shreveport, La., to Houston, Tex. A branch office and warehouse will be maintained in Shreveport as formerly.

BUILDS ADDITION TO PLANT

The Ohio Injector Co. with main office and plant in Wadsworth, Ohio, has started work on an addition to its plant, 280 by 340 feet, and four stories, for the manufacture of brass and iron valves. It is expected to have the building under cover and ready to operate soon after the first of January.

PARKERSBURG

Has served the oil fields of the world for 32 years



TYPE "M"

STEEL BAND WHEELS

Ship channel arms fitting closely over cast bosses on flanged hub, takes shear off bolts and prevents play in arms. No loose bolts or rivets. Minimum vibration. True running.

Type "M" band wheels are adapted for use with either chain driven or friction type sand reels.

Furnished with either double or triple tug pulleys as optional equipment.

Made in 10, 11, 12 or 14 foot diameters with 12, 14 or 16 inch face as desired.

Write for detailed specifications and prices.

THE PARKERSBURG RIG & REEL COMPANY

EXECUTIVE OFFICES & MAIN PLANT

PARKERSBURG, WEST, VA.

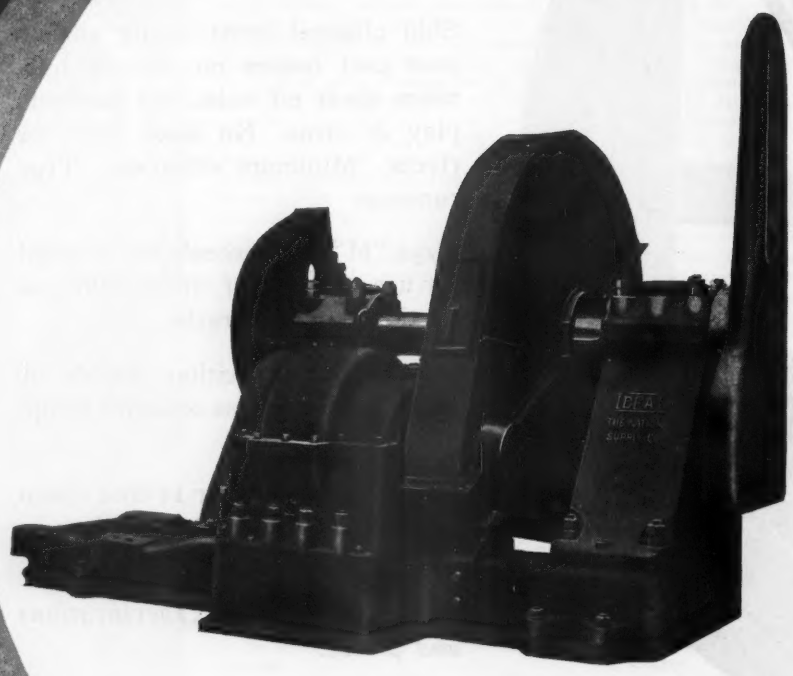
PARKERSBURG PRODUCTS

Steel Derricks and Steel Crown Blocks	■	Rig Irons (A.P.I. Standard)	■
Chain Driven Sand Reels and Bailing Reels	■	Portable Drilling Machines (Wood and All-Steel)	■
Steel Wheels	■	Bolted Steel Tanks	■
All-Steel Standard Rigs	■	Miscellaneous Drilling Equipment	■

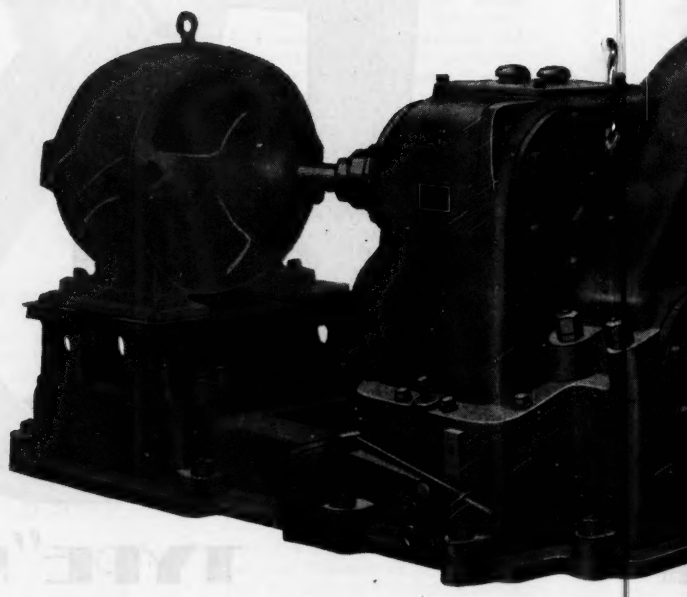
Check the equipment in which you are interested, tear out and return this coupon, with your name and address, to us, and we will send you complete information on the items checked.

IDEA

ouble Reduction



Type B
Horse Powers
15-35 or 20-50
Strokes, Inches
24,36,48,60 or 70



Type C-1
Horse Powe
15-35, 20-50, 2
Strokes, Inch
22½,30,37½,45,52

THE
NATIONAL
COMPAN

CAL

n Pumping Gear

Type C-1
Horse Powers
20-50, 25-55
Strokes, Inches
37½,45,52½,60,67½

Type D
Horse Powers
5 to 15
Strokes, Inches
22½, 30, 37½, 45, 52½

THE
AL SUPPLY
PANIES

EQUIPMENT AND SUPPLIES

DROP-FORGED DRILLING BIT IS ADDED TO LINE

An addition to the line of drilling tools made by the H. C. Smith Manufacturing Co., Los Nietos, Calif., is the type G drilling bit, a drop-forged special alloy steel bit. The company's policy has been to perfect the construction and method of hard surfacing and setting of the tool with steel castings and then to develop a means of drop-forging the developed tool. This policy resulted in the type G drop-forged core bit and coring equipment and is now found in the type G drilling bit.

The advanced serrated construction that distinguished the H. C. Smith drilling bit has been retained, new methods of diamond setting have been evolved and the drop-forging operation has been perfected.

Success is reported to have been attained by the use of the type G demountable drilling bit run with the side reamer bit body shown in the accompanying picture. Twelve side reamer bit bodies take care of all sizes from 5½-inch up to and including 27-inch. This is made possible by the use of different size blocks placed in the body. For example, a 5½-inch body will accommodate cutters from 5½ inches outside diameter up to and including 7⅜ inches outside diameter. The side reamers are manufactured to the same gauge of the bit as standard drilling practice. The rollers are of the rock-bit type, capable of cutting and keeping the hole to full gauge so that the operator is able to get on bottom with a sharp bit. The type G demountable drilling bit may be run with the side reamer bit body or with the plain body without side reamer rollers.

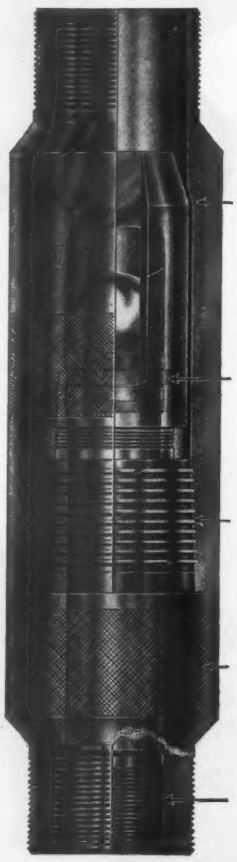
STRAIGHT START IMPORTANT

Fishing jobs increase in number, complication, and cost as oil wells go deeper. Today when wells go down two, three and four times as far as the "deep" holes of a few years ago, there is increased opportunity for the biggest cause of fishing jobs—the "twist-off"—to make trouble. The "twist-off" occurs chiefly because of crooked and irregular holes. The deeper the hole, the greater the opportunity for crooked and irregular drilling. K-P tools, manufactured by the Kennedye-Plumb Corp., St. Louis, Mo., are designed to meet modern deep-hole conditions, to drill holes that are out to gauge, round and true to vertical regardless of depth. By using the K-P straight-hole super-imposed head in drilling the primary or surface hole, the operator not only drills it faster and more economically, according to the manufacturer, but at the same time he avoids the greatest cause of crooked holes, namely, starting the hole off the vertical. It is impossible to drill a straight hole with a crooked start.

A 12-page bulletin describing and illustrating the Louis Allis "Explosion Proof" or type E electric motor is being sent out by the Louis Allis Co., Milwaukee, Wis.

VALVES MACHINED FROM COLD-DRAWN STEEL BAR

The design and construction of the Petro oversize valve, manufactured by the Petroleum Equipment Co., Fort Worth, Tex., are the result of extensive



research and experimental work. According to the manufacturers they will not unscrew in operation, or leak, nor will the crown become loose and work off. The valves are machined from the solid cold-drawn steel bar. So uniform and exacting is the machine work, the manufacturers say, that replacement parts interchange as on a new valve.

The make-up between the shell and the sub is similar to a tool joint. Broad Acme threads on a taper joint are uniformly hobbed with modern thread-cutting machinery. A Petro valve, it is asserted, has never been known to unscrew while in operation, yet it may be opened with ease and simplicity.

Unscrewing of the crown while the valve is in operation is prevented by a positive stop against the shoulder of the shell. The shell of the valve is sufficiently heavy to resist the crushing action of tongs. Both the shell and the sub are knurled to aid in the application of tongs for breaking down.

CANADIAN COMPANY FORMED

The Canadian Nitro-Glycerin Co. has been incorporated under a Dominion charter with head office in Calgary. The incorporators include P. L. Sanford, Alexander Hannah, J. J. Saucier and Orrin H. E. Might, lawyers, and Cluny McDonald, accountant, all of Calgary. The purpose of the company, as detailed in the charter, is to manufacture, buy, sell and deal in explosives, powder, ammunition, chemicals and fertilizers of all kinds and all their by-products and to carry on the business of shooting oil wells and drilling oil wells in all their respective branches.

ADDITIONS TO BONNEY WRENCH LINE OFFERED

Two new chrome vanadium wrench sets are announced by the Bonney Forge & Tool Works of Allentown, Pa. The No. 29 set consists of three short-type double hexagon box wrenches. These three double-end wrenches take care of the six most commonly used nuts and bolts. The No. 31 set consists of six double hexagon, double-end box wrenches of the regular length, and are the 12 most frequently used sizes. These wrenches are broached with double hexagon openings, making it possible to remove nuts or bolts even though obstructions permit only a one-twelfth turn at a "bite."

The Bonney wrench line is further broadened by the addition of double hexagon chrome vanadium sockets in a wide range of sizes. Because of the great strength of chrome vanadium alloy steel it has been possible to design these new sockets with very thin walls.

TRADE LITERATURE RECEIVED

"A single lot of poor castings can easily upset all inventory plans and often gobble up all inventory savings," says Sivyer Reports, published by the Sivyer Steel Casting Co., Milwaukee, Wis.

Articles designed to show the value of nickel and Monel metal in various uses are presented in interesting form in the current number of Inco, published by the International Nickel Co., Inc., New York.

Approximately 350 unretouched action pictures of actual jobs the world over appear in series of eight booklets, dealing with the use of "Caterpillar" tractors in industry, published by the Caterpillar Tractor Co., San Leandro, Calif., and Peoria, Ill.

The Landis Handbook, just issued by the Landis Machine Co., Waynesboro, Pa., gives detailed directions regarding the operation of Landis chasers, die-heads and machines. There is also helpful information concerning thread tables, etc. The book, attractively printed on sized paper, contains 88 pages.

"One of the old timers," a gray-mustached fireman in red shirt, provides a cover page for the current number of The Modern Fire Chief, published by the American-La France and Foamite Corp., Elmira, N. Y.

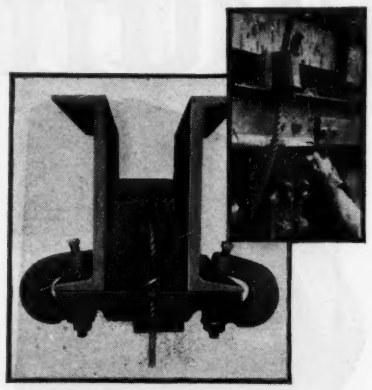
A folder in colors describing the FWD Oil-field Special truck, in which the manufacturers say years of world-wide oil-field experience have been concentrated, is being sent out by the Four Wheel Drive Auto Co., Clintonville, Wis.

UNDER WORTHINGTON LICENSE

That American engineers produce Diesel engines which are the equal of any in the world is evidenced by the fact that Carels Freres of Ghent recently completed their first engine under license from the Worthington Pump & Machinery Corp. The engine, a four-cylinder two-cycle double-acting unit developing 4,000 brake horsepower at 128 revolutions per minute, has cylinders 28 inches in diameter and a stroke of 40 inches. It is similar to the engines that Worthington has furnished the shipping board and is to drive a large alternator in South America. A second engine of this design is being built by Carels Freres for service in the same power station. Carels Freres were among the pioneer builders of Diesel engines. In 1914, the ravages of war ruined what had been one of the finest engine shops in Europe.

TIME AND WORK SAVED BY NEW CATLINE GRIP

Recognizing the need for some form of grip for catlines which would take the load off the cathead when required, and at the same time allow for suspending the load on the catline in any position, the California Manufacturing and Engineering Co., Los Angeles, Calif. has produced the "Calmec" catline grip. This little device is a steel block which can be attached to either steel or wooden headers, allowing the catline to pass freely through a



tapered aperture until such time as a wedge-shaped lock is pulled up into the taper, gripping the catline and locking it against all upward strains. A handline within easy reach of the operator is roved through a pulley on the face of the block and serves to pull the locking wedge into position. When the load is taken up again on the cathead, the locking wedge automatically drops down and allows the catline to run free.

The device is made in two styles, between-the-header members and above-the-header, which are shown in the accompanying illustration. This alows the operator to run his catline either between the header members or on the outside. It has been tested thoroughly and made standard equipment by major producing companies in the California fields and many smaller operators, owing to the fact that it is a saver of time, labor and catlines. It saves time by eliminating the line-snubbing operation when the engine is needed for other purposes. It saves labor by relieving the operator from holding the catline on the cathead. It saves catlines because it does away with burning up the catline on the cathead.

MONEL METAL MEETS PROBLEM

Replacements, repairs, costly shutdowns and lost production are some of the tolls exacted each year by the action of corrosive substances on metal equipment. Engineers, production managers and technical experts are constantly in search of methods and materials which will solve this problem of corrosion. How it has been met in innumerable plants is described in a new bulletin of the International Nickel Co., Inc., New York, which presents the results of exhaustive surveys and studies by the company's development and research department. Included in the bulletin is a table of known and established users of Monel metal and nickel in overcoming corrosive action. Uses estimated from laboratory tests alone are not included. Monel metal is resistant to corrosion by strong acids, alkalis and a wide variety of salts, oxygen-bearing solutions and other corrosive conditions. With this it combines great strength and ability to withstand abrasion, impact and fatigue. For some processes and types of corrosion pure nickel is preferable to Monel metal.

BE SQUARE TO YOUR MOTOR

Out *of the* Past

Oxen pulling the covered wagons of our grandfathers across the prairies . . . the pony express . . . laying the iron rails of the first transcontinental railroad, linking the East with the West . . . transportation, from the days of our forefathers, to those of our sons, has seen many changes, and now before us, is the dawn of a new era of transportation—*the airplane.*

A development of the pioneering instinct made possible by modern science, this new mode of transportation demands changes in motor fuels and lubricants as radical as the airplane is different. In keeping with progress Barnsdall—*always a pioneer in the most advanced methods of refining offers the industry of the air, super AVIATION fuels and lubricants.*

Refineries: BARNSDALL, OKMULGEE, WICHITA

Sales Offices: TULSA, CHICAGO, NEW YORK, ST. LOUIS, KANSAS CITY, ST. PAUL, LOS ANGELES

BE SQUARE PRODUCTS
From Oil Well to Jobber

SUPER-GAS the Anti-Knock non-poisonous motor fuel; BE SQUARE Gasoline; Naphtha; Furnace,Oil; Gas Oil; Fuel Oil; BE SQUARE Motor Oils; Cylinder Stocks; Bright Stocks; Red and Pale Oils; Wax; and Petroleum.

All grades of Lubricating Oils.

BARNSDALL

The B

WORLD'S *First** REFINER

* In 1860, William Barnsdall, the father of T. N. Barnsdall, the founder of BARNSDALL, established the world's first oil refinery

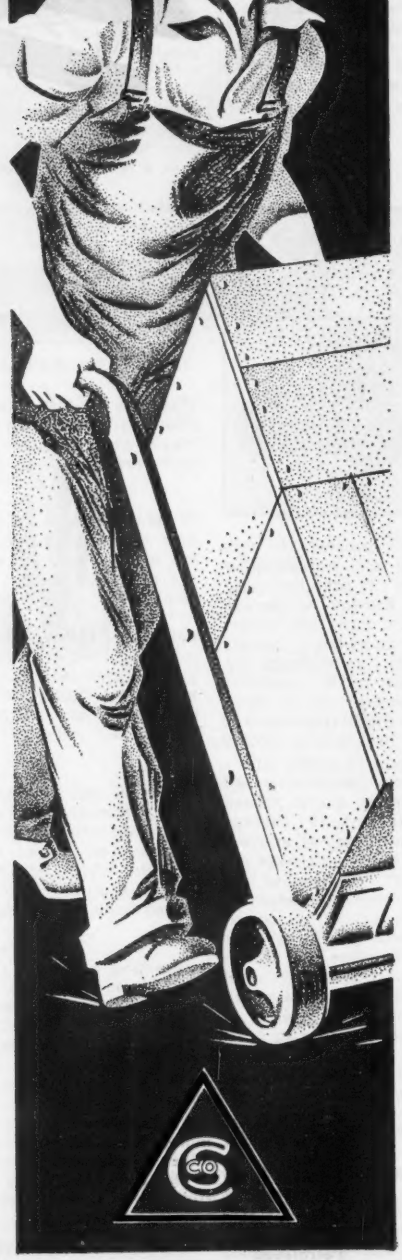
Tnemec

CONCRETE and WOOD FLOOR COATINGS

Impervious to water, grease and hard wear

Made in various shades of gray, green, brown and maroon.

Put up in 1-gallon and 5-gallon containers.



Tnemec Floor Coatings make any wood or concrete floor impervious to water and absolutely prevent grease and oils from working in. They reduce vibration of tread and prevent the forming of cement dust due to wear.

"If Continental Sells It . . . . There Is No Better"

THE CONTINENTAL SUPPLY CO.

General Offices: ST. LOUIS. *Export Offices:* 74 Trinity Court, NEW YORK
London Offices: 316-17 Dashwood House, Old Broad Street, E. C. 2.

THE CONTINENTAL SUPPLY CO., Ltd.
224 TRADERS BLDG., CALGARY, ALBERTA, CANADA

CONTINENTAL

Field Problems and Their Solution

EDITED BY THOMAS F. SMILEY

In order that men connected with the drilling, producing and transporting branches of the petroleum industry may procure quickly a solution of many problems confronting them from time to time in their work, The Oil and Gas Journal has arranged with leading engineers and other recognized authorities to answer questions submitted by readers of this publication pertaining to the work of drilling and producing crude oil and transporting this product.

Everyone is invited to submit questions freely. These questions will be submitted to proper authorities by Mr. Smiley, who edits the page, and answers, based on the best available information, will be published. Each question should give as much detail as possible, especially where it relates to matters where depths of sands, types of sands and operations on adjoining properties would have a bearing on the problem involved. The source of all questions will be considered as confidential and only initials will be published in connection with the question.

In this connection, The Oil and Gas Journal will be glad to publish articles from field men who have devised new methods or practices which are improvements.

In case an immediate answer is important, one will be given by mail if the writer requests it.

MORE HELP FOR H. C. I.

The problem of H. C. I., published in the issue of October 17, involving cavings entering the hole in such a way as to make cleaning out difficult, has elicited the following helpful letter from Frank Redick, of the Mid-Kansas Oil & Gas Co., Iraan, Kans.:

"In your column of the October 17th issue, H. C. I. asks some advice on the procedure in cleaning out what he considers is a caving hole.

"While, of course, I may be mistaken in this matter, nevertheless, it occurs to me that H. C. I. is not having so much trouble with caving formation as he is with the cuttings settling before he can get the bailer in the hole. From his question, I take it that there is considerable water in the hole, and that the formation, while if not exactly sand, is no doubt more or less sandy shale, and that being the case, there is very little chance for the tools to mix this to a consistency where it will not settle. I have been up against this same thing myself in times past, and it can be handled with the proper equipment and procedure.

"I would suggest that he first try running a Larkin pump instead of a common bailer. Before running the pump, I would suggest that he run the tools in and stir this sediment for several hours, and then try running the Larkin pump. If this will not lift it, I would suggest that he mix up some thick mud and dump this in the bottom of the hole; this will cause the sediment to remain in suspension after it has once been stirred up and it can then be picked up with a bailer without difficulty. It would also have a tendency to plaster up the walls should there be any cavings.

"I would hesitate to say positively that this would cure his trouble as I do not know the exact formation he is working in; but unless he is fighting an extremely bad cave and his trouble is what I suspicion it is, he would find that the above mentioned procedure would enable him to get some place."

COST OF DRILLING WELLS

What does it cost to drill an oil or gas well? The depth of the wells varies greatly, I know, and the cost must vary in proportion, but probably you can inform me what it costs per foot of depth. —T. S. T.

The cost of drilling oil wells is dependent upon many variable factors. Among these are the distance of the well from available sources of supplies; the depth to be reached; the character of the formations to be penetrated (these in turn determining the system to be employed and the kind and quantity of casing to be used); the number of water-bearing, gas-bearing, caving or other troublesome strata encountered; and the cost of labor, fuel and water.

A 1,000-foot well may cost from $1,500 to $15,000, and a 2,500-foot well may cost from $20,000 to $150,000, accidents, "fishing" jobs, and consequent delays, contributing largely to unusually high costs. The time required for drilling a well to completion may vary from 15 or 20 days on a 1,500-foot well to a year or more on a 5,000-foot one, although the time necessary to drill wells of 2,500 to 3,200 feet in depth ordinarily varies from about 30 to perhaps 100 days.

Drilling to greater depths has been the principal factor to increase the average cost of getting oil production in recent years. Forty years ago virtually all wells were shallow, few going to depths exceeding 2,000 feet and most not exceeding 1,000 feet. The cost per well was less than $1,000. Twenty years ago oil was struck at an estimated average depth of 1,500 feet and at an estimated average cost per well of $2,500. The average cost today is about $35,000 per well.

EFFECT OF SAND POROSITY

It seems to be the common belief that a very open, porous sand will produce more oil than a close sand. but in the field where I am working we get an extremely porous sand that does not yield as much oil as wells a few miles from here do that have a much closer sand. Is the common belief about this wrong or is this just an exception to the rule?—O. S. T.

In the study of size of grains and open space between them in the stratum that has been saturated with oil, gas and perhaps water, and then drilled into, producing the three elements named. it has been found that there are many factors entering into the problem of ultimate yield of oil and gas in addition to the relative size of sand grain and pore space.

It is almost impossible to find strata of sandstone of appreciable size in which the grains of sand are equal in either shape or size because these sand beds have been produced by the action of water and this water will carry material of varying size dependent upon its velocity. During a perior of high water the grains of material carried would be much larger than those moved during periods of low water, and the material dropped out of the stream likewise would vary with the stream's velocity.

It therefore follows that in building up a sand body that afterward is consolidated into a sandstone through the process of cementing the grains together with silica, lime carbonate, iron oxide, or some other substance, the pore space between the sand grains is materially reduced.

Then follows the period of saturation. The force that moves the oil, gas and water into the pore space in the sand body will vary. The degree of saturation is not the same for sand bodies of exactly the same character that have been made up in a laboratory if the pressure exerted in charging them with fluid is varied.

Melcher shows that the effective porosity of a sandstone depends upon the pressure applied to the contained liquid, for with one sandstone he found it would absorb 12.9 per cent of water by volume at atmospheric pressure, 14.0 per cent at 250 pounds pressure, and 17.9 per cent at 1,000 pounds pressure.

If this is true in saturating the sand it is likewise true when the oil is drained from the reservoir, and if the gas that had accompanies the oil has been dissipated without being compelled to do its share of work in moving the oil to the well it will be found later that this sand body did not yield as great a volume of oil as that obtained from other wells where the gas pressure was conserved.

There is no known rule that can be applied to the relative recovery of oil from a given sand body, for there are too many variable factors that are unknown to the operator at the time the well is drilled into the producing horizon. The only safe rule to follow in all cases is to keep the gas-oil ratio as low as possible during the whole life of the well, so that the gas that has been entrapped in the formation along with the oil cannot escape unless it forces a portion of the oil ahead of it to the well.

WHY WAS IT CALLED THAT?

BULLROPE

"Bullrope" originally was a nautical word designating a hawser let through a block on the bowsprit end to the buoy to keep the buoy clear of the stern. It is wholly likely that early oil operators requiring heavy rope went to a ship chandler and bought some of this bullrope, and that when manufacture of heavy rope specifically for oil-field use was begun the name "bullrope" was applied to it. It is easy to see how the prefix "bull-" then was joined to the word "wheel" to make "bullwheel," the big shaft or spool upon which the bullrope is wound.

AVERAGE OIL PRODUCTION

Are you able to tell me how many oil wells there are in the United States and what their average production is? Is this production what is called "settled production?"—E. U. E.

There were 322,338 active oil wells in all fields of the United States on December 31, 1928, and these were producing an average of 7.61 barrels each daily. There were 307,037 active wells at the end of June, 1929, and these were producing an average of 8.74 barrels a day. Some of these wells are yielding oil at a high rate, being flowing wells comparatively recently drilled. that is, wells with "flush" production, while others are wells which are still flowing but whose production has greatly declined since completion and are steadily declining to a point where the wells must be pumped to be commercially productive. Still another class of wells, and this is by far the largest in point of number, are the pumping wells with "settled" production. Usually, after wells are put on the pump, the decline in production is slow, as compared with the rapid decline of flowing wells, and this has caused the production from such wells to be called "settled" production.

In the older fields where virtually all the wells are pumping wells, the average production per well is in most cases less than one barrel a day. For instance, in Pennsylvania where there are 78,675 producing oil wells, nearly a fourth of the country's total, the wells average only .38 barrel a day. Some of these wells have been producing for many years.

There are a large number of old wells in Oklahoma, which produce about a barrel a day, but Oklahoma also has many wells in new fields producing at a high daily rate. The average production per well per day in the state is 12.13 barrels for 57,385 wells. The average yield of California wells is relatively high, amounting to 76.06 barrels for 10,305 wells.

GEOPHYSICAL LITERATURE

I wish to have a complete list of books on geophysical methods of exploration. Apparently this field has been somewhat neglected by the scribes. I would appreciate any information you can give me along this line.—A. B.

Since geophysical exploration is still in the early stages of development, the bibliography on the subject is not large. Nevertheless much of great interest and value has been written. "Geophysical Prospecting," published by the American Institute of Mining and Metallurgical Engineers, 29 West Thirty-ninth Street, New York, contains papers and discussions presented at the meetings of the institute held in New York in February, 1928, and in Boston in August, 1928. Electrical, magnetic, gravity and seismic methods are treated in this volume by men who are leaders in their fields.

"Geophysical Prospecting," by John H. Wilson, assistant professor of Geophysics in the Colorado School of Mines, Golden, Colo., is a series of articles designed to present the subject in an elementary way, reprinted from the Colorado School of Mines Magazine. It may be obtained by addressing the publishers of that periodical.

Cobb's translation of Ambronn, "Elements of Geophysics," published by the McGraw-Hill Book Co., New York, is a general treatise on applied geophysical methods rather than on their application to the finding of oil.

The Oil and Gas Journal has published a long list of valuable papers on various phases of geophysical prospecting. Among these should be mentioned especially the articles by L. Sparagen. General articles on the subject by this writer on September 27, 1928, and October 4, 1928, were followed by more than a dozen others, dealing with specific phases of the subject. In the issue of October 10, 1929. are "Magnetometer Practice in the Field," by W. M. Barret, and "Development in Science of Geophysics," by Dr. C. A. Heiland.

If you will write to Miss Florence W. Lundell, technical librarian, Tulsa Public Library, Tulsa, you can obtain the bibliography on geophysical methods prepared by her.

RATTLESNAKE DOME GAS WELL

I am informed that there is some gas near Farmington, N. Mex., that can be compressed to high pressures and that liquefies upon expansion, thus making it possible to convey in a container sufficient gas to produce more natural gasoline than the cubical contents of the gas container. I would appreciate any information you can give me on the subject.—G. E. G.

The information you have received is substantially correct. The well producing this gas, on Rattlesnake Dome, is owned by the Continental Oil Co.

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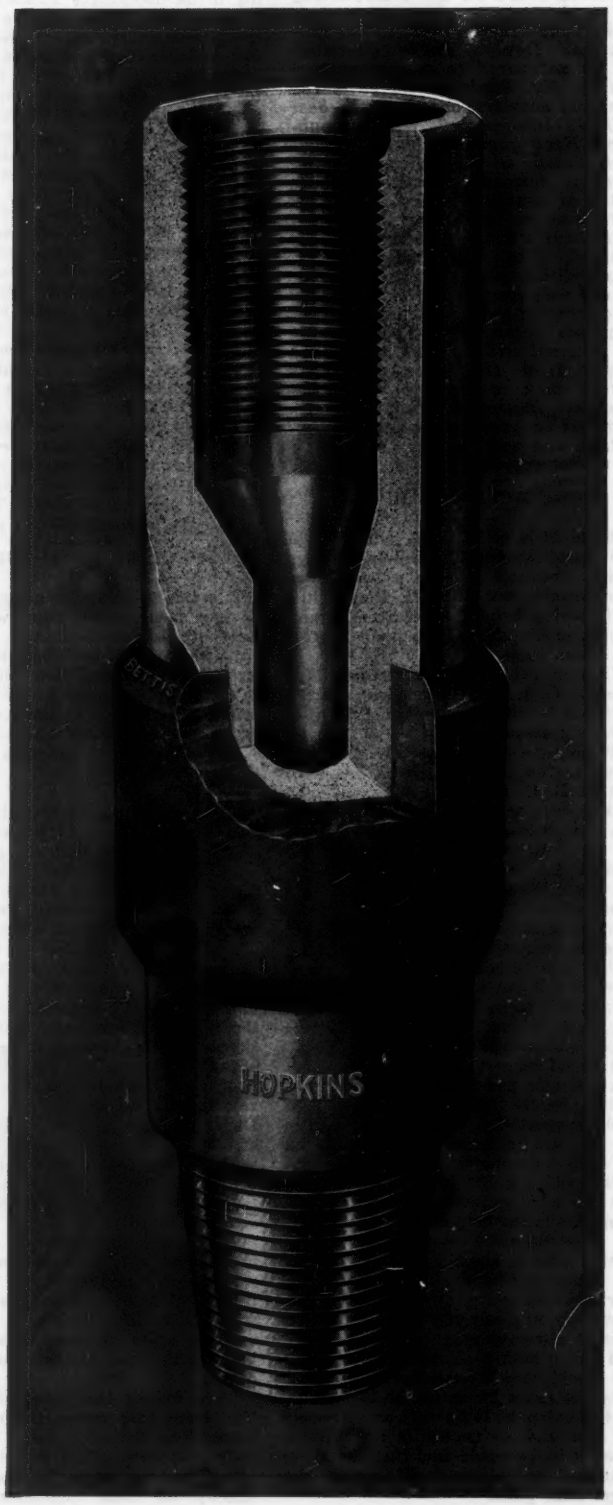

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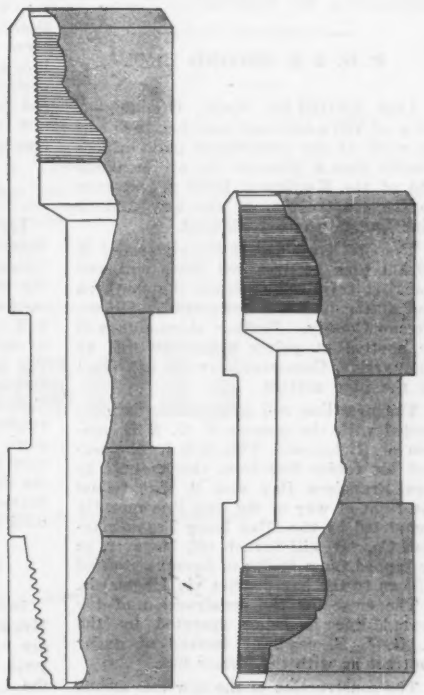


Cross sectional view of 3" Tool Joint showing enlarged cross area at point of recess.

Cross sectional view of 4" Collar. Note extra heavy wall at recess.

Natural Gas Developments

NATURAL GAS TO BRING PLANT DEVELOPMENT

LOS ANGELES, Calif., Oct. 26—President A. F. Hockenbeamer of the Pacific Gas & Electric Co., forecasted an era of intensive industrial development for northern California with the completion next year of his company's natural gas lines from the Kettleman Hills.

Introduction of natural gas into most northern California communities will come rapidly, he said, because it will be necessary for the company to build only 750 miles of gas mains. He showed the magnitude of the project by pointing out that the company's mains next year will be more than long enough to reach from San Francisco to New York.

Although the gas from Kettleman will be in the mains in some centers of population soon, the substitution of natural gas will be gradual, on account of the necessity of changing burners for the new fuel, he said. These changes are now being made in some communities served by the line already completed in the company's western territory.

Use of natural gas throughout the entire system will await the completion of the main up the San Joaquin Valley, in order to have more than one source line in operation so that either could be used should the other be for any reason put out of commission. The two lines will be joined at Oakland.

Forecast of industrial growth resulting from the cheaper and better fuel was based upon similar results obtained in other places with low cost fuel. The notable growth of Los Angeles was cited. Development of industries had followed availability of markets, transportation and resources. Addition of cheap fuel to northern California's other resources is counted upon by the Pacific Gas & Electric president to draw some new manufacturing plants particularly to the region between Sacramento, Stockton and San Francisco where cheap water transportation is available.

One factory has already been drawn to Oakland as a result of the natural gas development, Mr. Hockenbeamer said.

P. G. & E. SECOND LINE

LOS ANGELES, Calif., Oct. 26.—A crew of 100 additional men has been put to work at the compressor plant of the Pacific Gas & Electric Co. at the north end of the Kettleman Hills preparatory to the construction of the new 22-inch pipe line north to Richmond.

The first trainload of the pipe order of 50,000 tons has reached Richmond and the first trainload to reach the southern end of the line was delivered at Huron, Fresno County. Further shipments will be spotted at points along the line as they arrive. Construction work will start as the pipe arrives.

The new line will immediately be connected with the present P. G. & E. system at Richmond. This will be the second big feeder line from this district to San Francisco Bay and it will follow the right of way of the first line recently completed by the Mike Lang Transportation Co. It will branch off, however, to be tapped for a feeder to Sacramento and will go to the bay district via Haywards.

The crew for the construction of the second line is being operated by the P. G. & E. company instead of under contract as with the former line.

The construction of the new line means the enlarging of the compressor plant which will be called on to force the gas flow through the double feeder to the bay district.

NEW USES FOR GAS UNKNOWN 15 YEARS AGO

"Gas was the first in the field of public utilities. When, however, electric lights and power came on the scene and proceeded to expand rapidly the pessimists said it sounded the death knell of the gas industry. No such thing has happened," Roger W. Babson points out. "Instead of lighting by gas, people began cooking and heating water by gas; then industries requiring heat in convenient form found gas best suited to their purposes and began using it in huge quantities; and lately an increasing number of people are using it for home heating. Today there are some 20,000 new uses for gas which were unknown 15 years ago. Growing complexity of manufacturing and chemical processes, nearly all of which require heat at some stage, have multiplied the gas requirements of industry many fold. Total investment in gas properties is now $4,750,000,000. Gross revenues of gas companies, including natural gas distributors, are running at the rate of $860,000,000 per year. Nearly one-half of our population are using gas service.

"One great reason for the remarkable price advances and growing popularity of the electric light and power stocks is, of course, the buying up of many smaller companies to form holding companies, and the subsequent consolidation of these holding companies to form superpower combinations. The first step was to get together desirable operating companies for a holding company. The second step was the grouping of holding companies. This process has gone on rapidly, and security values, in many instances, have skyrocketed. Indications are that the gas industry is in the first stages of a similar merger movement. A few years hence we shall have a few tremendously large supergas combines corresponding to the present 'superpower' combinations. The advantages of linking widely-scattered companies so as to supply fluctuating consuming demands without expensive addition to plants, greatly reduces operating costs and justifies the heavy expenditures necessary for pipe line installations. It was the process of interconnection which made possible the centralization of scattered electric light and power companies into a few big systems, and it is the same process which will be followed by the gas interests. In fact some authorities now state that it is actually cheaper to transport gas than it is electricity."

GAS FOR PACIFIC TOWNS

LOS ANGELES, Calif., Oct. 26.—Visalia homes will get natural gas, it was forecast by F. M. Banks, local manager of the Southern California Gas Co. Successful tests on the 10-inch pipe which will convey the fuel from Kettleman Hills to serve the valley, will be made first. The line now being tested to the west of Hanford is being brought into that city. Tulare may be furnished with gas on November 1, while Exeter, Lindsay, Strathmore and Porterville will probably secure Kettleman gas on November 6, and the Stratford chamber of commerce is endeavoring to induce the company to extend a pipe line to that community.

BURKBURNETT GAS LINE

BURKBURNETT, Tex., Oct. 26.—Meador & Whitaker, pipe line contractors are planting a 3-inch gas line from the main line of the Burkburnett Gas Co., to the LaSalle plant, located on the southern outskirts of this city. This job is being done in order to secure an abundant supply of natural gas. Work is expected to be completed in a few days.

SAYS EUROPEANS WERE SEEKING GAS CONTROL

A struggle between European and American interests for control of the major portion of the natural gas industry is being waged under cover, according to Stanhope S. Goddard of Goddard & Co., Inc., who says that had the financial interests of this country not perceived the opportunities in the industry when they did, it probably would have been impossible to prevent foreign financiers from stepping in and gathering up control of some of the promising companies.

A few years ago only $200,000,000 or $300,000,000 were invested in natural gas projects. At the close of 1928 more than $1,750,000,000 had been contributed to natural gas developments. In 1928 there were more than 4,000,000 consumers of natural gas, taking a total of 1,600,000,000,000 feet, for which they paid a gross of $325,000,000. In the first six months of the present year sales of natural gas increased approximately 50 per cent compared with the same period last year.

In the past two years the common stock of the Lone Star Gas Corp. has appreciated approximately 40 per cent annually; Arkansas Natural Gas Corp. common has risen in value from $4 to $22; Houston Gulf Gas Co. common, which in 1927 sold from $6 to $10, has a current market value of $20 to $21; the common stock of the Northern Texas Utilities Co., which sold two years ago at $5.50, is at present selling at about $11; Dixie Gas & Utilities Co. common, which sold in 1927 at $7.50 to $11, is now selling at about $27 a share; common stock of Dixie Gulf Gas Co., a large part of which was bonus stock in 1927, now has a market value of about $7; Memphis Natural Gas Co. common, which sold as low as $5 last year, now commands a price of about $23.

Consolidated Gas Utilities Co. common sold last year for $5 and is $15 a share at the present time; American Natural Gas Corp. common, a part of which was bonus stock in 1927, is now selling above $12 a share; the common stock of the Missouri-Kansas Pipe Line Co. sold at $5 last year, is now $32. Columbia Gas & Electric common, which in 1928 sold at $98.75, is now selling around $125 after a 2½ for 1 split-up, and United Gas Co. common, bought for $15 last year, has a current market value around $47 a share.

REPRESSURING TEST

LOS ANGELES, Calif. Oct. 26.—Standard Oil Co. of California is still experimenting with the hole drilled on Section 11-22-17 in north dome of Kettleman Hills to determine the feasibility of repressuring the underground chambers with surplus gas. High pressure pumps are being used and gas flow is being taken from the Standard Oil producing well offsetting the Milham producer.

So far, attempts made to force gas into the zones have proved futile, but experiment is being carried on in an effort to find some means of handling surplus gas in the field and thus meet requirements of the new state gas law in preventing waste of gas.

TO KEEP GAS SYSTEM

After considering offers ranging as high as $20,000 for its municipally-owned gas distributing system, the Coalinga, Calif., city council announced it would not sell but would continue to operate the utility. It was also announced that a program of improvements in the system would be instituted.

LONE STAR PURCHASES SEVERAL TEXAS CONCERNS

DALLAS, Tex., Oct. 26.—Purchase of the Texas Cities Gas Co. has been announced by the Lone Star Gas Corp., with headquarters in Dallas.

The Texas Cities Co. operates in Galveston, Waco, Paris and Brenham, Tex., and Juarez, Mexico, and several cities in Oklahoma, Washington, Oregon, Iowa and Idaho. The Lone Star company announced no change in the operating management or personnel of the properties would be made.

The Texas Cities company was owned by the Union Utilities, Inc., and was organized June 1, 1928.

The Lone Star company also acquired the following additional properties: Council Bluffs Gas Co., Council Bluffs, Iowa; Guthrie Gas Co., Guthrie, Okla.; Northwest Cities Gas Co., operating manufactured gas plants in Walla Walla and Yakima, Wash.; Lewiston and Clarkston, Idaho, and Astoria, Eugene, Pendleton and Springfield, Ore., and Coos Bay Gas Co., operating manufacturing gas plants in Marshfield and North Bend, Ore.

CANADIAN WESTERN OPERATIONS

CHATHAM, Ontario, Oct. 26.—With the close of 1929, Canadian Western Natural Gas, Light, Heat & Power Co. of Calgary will have completed the most active development year in a 12-year period. A total of $600,000 will have been expended principally in extending services in the city of Calgary; bettering the service and preparing for future growth by installing larger mains. During the summer 40 miles of new distribution lines were laid. A total of 303 miles of distribution lines and 252 miles of transmission lines are now operated. In the municipalities of Calgary, Lethbridge, Taber, Macleod, Granum, Claresholm, Stavely, Parkland, Nanton, High River and Okotoks the company supplies a total of approximately 19,000 customers. Practically all the natural gas utilized in Calgary now comes from the Turner Valley, where a daily open flow of 250,000,000 feet has been developed. The flow from Foremost and other gas fields is kept in reserve. Three natural gas lines connect the Turner Valley Field with Calgary.

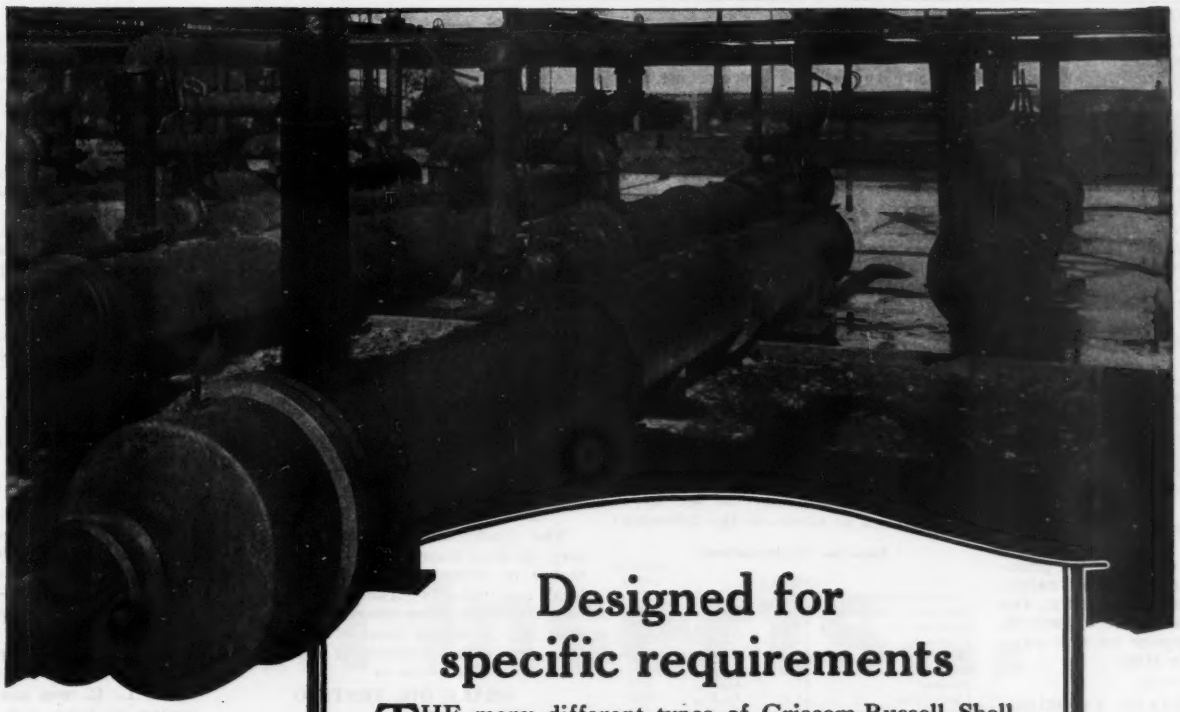
Considerable new development will be undertaken next year. In Calgary approximately 95 per cent of the large buildings, apartment blocks and residences on the company's lines now use natural gas.

COKING GAS PLANT

CHATHAM, Ontario, Oct. 26.—The Dominion Natural Gas Co. has been granted a two-year option on a 5-acre site owned by the London & Port Stanley Railway at Port Stanley, Ontario. Representatives of the company state it is intended to erect a coking plant with an output equal to the production of all existing gas plants in Ontario. It is understood gas from this plant will be used to supplement the natural gas supply handled by this company, and to supply new markets.

WASTE GAS PROBLEM

CHATHAM, Ontario, Oct. 26.—Dr. C. S. Camsell, chairman of the joint commission to consider the waste gas problem in western Canada, visited Calgary recently in connection with the re-opening of the sessions of the commission. He stated that the most important solutions to the problem were more extensive utilization as a fuel, extraction of by-products and storage possibilities.



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Technical Questions Answered

BY CHARLES K. FRANCIS, PH.D., TECHNICAL EDITOR

This department of The Oil and Gas Journal is devoted to the manufacturing branches of the oil industry.

Those connected with the refining of crude petroleum, the manufacture of natural gasoline and closely allied industries are invited to submit their problems to Dr. C. K. Francis, technical editor. The department was created for the purpose of aiding managers, superintendents, engineers, chemists and all those engaged in the various phases of plant operation; also those connected with the marketing and utilization of petroleum products.

Questions should be submitted in as much detail as possible so as to assure a satisfactory answer.

All inquiries should be signed and if other than the given initials are to be used please indicate the desired letters.

Questions involving patented processes, intricate formulas and calculations and estimates of costs, for obvious reasons, cannot be answered. The replies will appear on this page within a reasonable time.

COMPARATIVE VALUE CUSHING AND PENNSYLVANIA CRUDE

If a good Oklahoma oil and the average Pennsylvania oil were refined for the same products, would there be any difference in the total values?

During the year 1914 the Corporation Commission of Oklahoma made an investigation of the market price of crude oil and a report showing the refining value of Pennsylvania and Cushing crudes, when reduced to similar products, was presented to the commission. The data presented at this time, with the same prices, are arranged in the tables following:

Pennsylvania Crude Refined

Products—	Grav.	Yield gallons	Value per gallon	Total value
Gasoline	66	25	$0.12	$3.00
Naphtha	52	15	.085	1.28
Kerosene	45	15	.05	.75
300 oil	40	15	.05	.75
Nonviscous oil	35	12	.045	.54
Viscous neutral	31	8	.12	.96
Cylinder stock	25	8	.12	.96
Wax	..	2	.25	.50
Total		100		$8.74
Deduct 5 per cent loss				.44
Total value of products				$8.30

Cushing Crude Refined

Products—	Grav.	Yield gallons	Value per gallon	Total value
Gasoline	66	30	$0.12	$3.60
Naphtha	48	20	.085	1.70
Kerosene	40	15	.03	.45
Gas oil	35	15	.02	.30
Viscous neutral	28	10	.10	1.00
Cylinder stock	24	6	.08	.48
Wax	..	0.5	.25	.13
Asphalt	..	3.5	.06	.21
Total		100		$7.87
Deduct 5 per cent loss				.39
Total value of products				$7.48

At this time the value of the products are not the same; gasoline sells for a few cents less but naphtha and kerosene have a somewhat higher value and cylinder stock is much higher. However, the relative value of about 90 per cent of the Pennsylvania crude being assigned to the Cushing oil is approximately correct. When making such comparisons it should be remembered that the Pennsylvania oil is refined in the midst of a great industrial section, where there is a market for the lubricating oil, and the value of the lubricating fraction from the Pennsylvania crude is much greater than that from the Cushing crude.

GASOLINE HYDROCARBONS

What are gasoline hydrocarbons and how are they identified?—T. D.

The separation of most of the products of petroleum is accomplished by means of some form of distillation and consequently they are selected on weight, (gravity) and temperature, (boiling points). The various carbon compounds of petroleum are chiefly what are known as paraffin hydrocarbons. The pure compounds of this series have definite properties and the members may be arranged on the basis of composition, gravity, and boiling point. The lower members of this series are gases at ordinary conditions of temperature and pressure; these include methane, ethane, propane, and butane.

The gasoline hydrocarbons range from pentane to duodecane because all of them fall within the gravity and final boiling point of the blend commercially known as gasoline. These may be set up in tabular form as shown in the following:

Gasoline Hydrocarbons

Hydrocarbon—	Gravity A.P.I.	Formula	Boiling point F.°
Pentane	92	C_5H_{12}	97
Hexane	79.5	C_6H_{14}	156
Heptane	71.5	C_7H_{16}	209
Octane	65.5	C_8H_{18}	257
Nonane	59.5	C_9H_{20}	302
Decane	57	$C_{10}H_{22}$	343
Undecane	54.5	$C_{11}H_{24}$	383
Duodecane	52	$C_{12}H_{26}$	417

Frequently the lower, and more volatile, members are absent from the crude oil, or present in very small quantities, then the refiner must either add the lighter substances in the form of natural gasoline or make them in some kind of cracking process from the heavier distillates and residues obtained in the primary distillation of the crude. A finished gasoline is a balanced blend of the hydrocarbons that have been mentioned, the quality of the product depending upon the character of the equipment and the skill of the refiner which makes possible the selection of these hydrocarbons in the desirable proportions.

GRADES OF BURNER DISTILLATE

I would like a little information concerning burner distillate. Does each oil burner have to have a special oil or will they all burn the same grade of distillate?—C. E. S.

There are several types of burners that are used for burning the different grades of fuel oils. The common type of oil burner is one in which the oil is divided into a fine spray by means of steam; another form requires that the oil be delivered from the burner by the aid of pressure alone; a third kind is one in which the oil is sprayed into the firebox by means of air. The burners requiring steam or air to atomize the oil are seldom used in domestic furnaces but are adapted to the larger industrial plants. For the small installation the high pressure burner, with only oil, is probably the most suitable on the basis of operation and the distribution of the heat. These three types of burners are the kind of service, location and many other considerations.

When we study the different fuel oils that are available, it is clear that the wide spread in properties must mean a great difference in the conditions under which they may efficiently be used. The petroleum products that are used for burner fuel purposes in the liquid form will vary between 12 and 42 A.P.I. gravity, and from below zero to around 50 degrees Fahrenheit pour test. There is but little difference in the heating value of these oils, say btween 17,000 and 20,000 B.t.u. per pound. The gravity, pour point and viscosity are closely related; the lower the gravity, the higher the pour point and viscosity as a general rule.

A classification has been made of the fuel oils and distillates which is:

All oils below, or heavier than, 30 A.P.I. are fuel oils.

The oils between 30 and 36 A.P.I. are called gas oils.

Distillates are the products between 36 and 42 A.P.I. gravity.

Three standards for domestic fuel oils have been proposed, which provide for light, medium and heavy grades. The properties of these oils are indicated in the table following:

SPECIFICATION FOR DOMESTIC FUEL OIL

Grade of oil—	Flashpoint Min. (°F.)	Flashpoint Max. (°F.)	Water and solid (%)	Pour Max. (°F.)	Distillation 10% (°F.)	Distillation Max. (°F.)
1. Light oil. A light distillate for use in burners requiring a high grade fuel.	110	165	0.05	15	420	600
2. Medium domestic fuel oil. A medium distillate oil for use in burners requiring a high grade fuel	125	190	0.05	15	440	620
3. Heavy domestic fuel oil. A distillate fuel oil for use in burners where a medium low viscosity fuel is required	150	200	0.10	15	460	675

The maximum Saybolt viscosity should be 55 seconds at 100 degrees Fahrenheit.

The flashpoints of these distillates may, in some districts, be required to be higher or lower according to the local legal requirements. The pourpoint may be set at some lower temperature by contract but is seldom required to be lower than zero degree Fahrenheit.

SHALE OIL TESTING

Where is it possible to obtain details of the methods which are used for determining the yields of oil from shale and the separation of commercial products from this oil? What is the refining loss on shale oil?—S. H.

Methods for the examination of shale and shale oil may be found in "Manual of Testing Methods for Oil Shale and Shale Oil," Bulletin 249, United States Bureau of Mines.

A discussion of the methods for the preparation of shale oil and the character of the products obtained after refining is contained in this publication. The analytical distillation of the shale oil requires about 300 cubic centimeters, which is investigated in a manner similar to that which is used in the examination of petroleum. The sample is fractionated at atmospheric pressure with measurement of the percentages that distill between 45 and 527 degrees Fahrenheit. The distillation is continued under vacuum of 40 millimeters absolute to 572 degrees Fahrenheit. The fractions below 392 degrees Fahrenheit, atmospheric pressure, are combined to form the cut designated crude gasoline and naphtha. The next cut, to 527 degrees, is reported as crude kerosene.

The material following is quoted from page 29 of this bulletin.

"A laboratory distillation should not be expected to separate a crude oil into fractions precisely like those obtained in practice at a large refinery. Although such a separation is possible, it is seldom warranted. The trade terms 'gasoline,' 'kerosene,' etc., are used for convenience in laboratory reports and do not necessarily represent the yields of crude or the finished products to be expected in commercial practice.

"The yields of commercial products from crude shale oil can be determined only by actually making these products and refining them. Crude shale oils differ in their properties, and refinery losses will certainly be greater than in refining petroleum products. Therefore, to conclude from distillation analyses that certain yields of finished gasoline or other products may be obtained from a given shale oil is misleading unless the commercial refining loss is actually determined. The refining loss for petroleum products in the United States is between 1 and 5 per cent of the crude oil treated, whereas in Scotland the shrinkage in converting crude shale oil into finished products is 22 per cent. Results of the bureau's tests of many shale oils indicate that the loss in refining American shale products by ordinary refining methods will probably be at least 20 per cent. If motor fuel proves to be the chief product made from oil shale, as is anticipated, retorting methods may be modified to reduce the refining loss considerably below 20 per cent; in that event the yield of crude oil will be less, particularly if colored gasoline is acceptable."

HELIUM PRODUCTION AND COST

A question concerning the source, value and supply of helium as submitted by A. L. R. was answered in the September 26 issue, and the comments following have been received from The Helium Co.—Editor.

"In the September 26 issue of The Oil and Gas Journal you gave data on the production and price of helium gas in the United States which contained errors of omission. The Helium Co. controls natural gas deposits containing the largest amount of helium so far discovered. It has plants at Dexter, Kans., and at Thatcher, Colo. The Dexter plant has a capacity of more than 6,000,000 cubic feet annually and at Thatcher a production of 40,000,000 cubic feet annually, with present available equipment, is possible. The gas at Dexter contains approximately 2.5 per cent helium and at Thatcher the helium content is approximately 8 per cent.

"The Helium Co. and the Bureau of Mines have supplied helium to the United States Navy, the Helium Co. at a uniform price of $35 a thousand cubic feet and the Bureau of Mines at prices ranging from the original one of approximately $185 to a minimum one of $46. This price differential was mde possible because of the greater helium content in the gas processed by the Helium Co. and because of more advanced extraction methods and the disadvantages incident to governmental operation.

"Of course the Bureau of Mines' estimate of $20 helium is based on operating costs alone; in other words, includes labor and material costs only, and since a large part of their raw gas costs are charged against conservation, probably the $20 figure does not include all material costs. The bureau does not consider original costs of plant and equipment, depreciation and other costs in arriving at its helium price. An instance of this is that at its Fort Worth plant, abandoned after 10 years, the cost of building, equipment and research, amounting to approximately $12,000,000, was never taken into account in figuring the cost of its helium production. Employing the usual business methods of accounting, the bureau's Fort Worth helium cost approximately $165 a thousand cubic feet.

"As The Oil and Gas Journal always has evidenced an impartial attitude in its editorial columns we are certain you will be happy to publish this additional helium data on your Technical Questions page."

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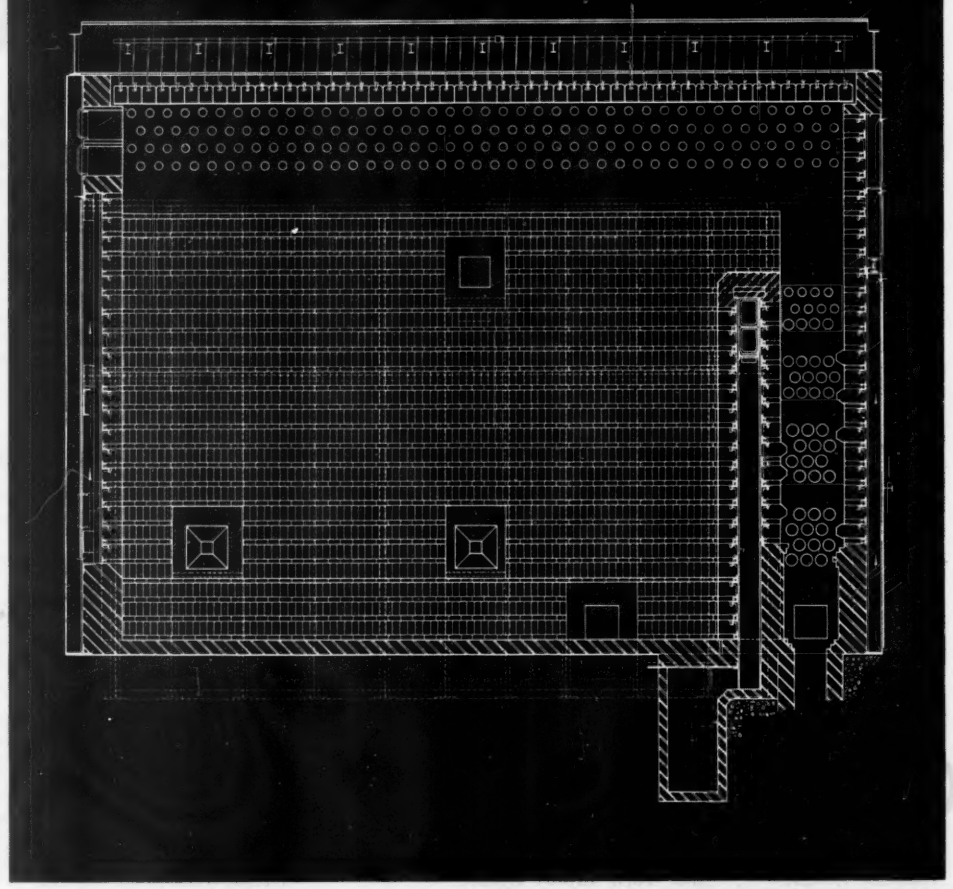

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A SUSPENDED WALL AND ARCH FOR EVERY FURNACE

KENTUCKY-TENNESSEE

(Continued from Page 80)

18 producers with an initial production of 2,126 bbls., 9 dry holes and 1 gas well.

County—	Comp.	Wells	Prod.	Dry	Gas
Ohio	24	15	1,941	9	0
Daviess	2	2	110	0	0
Henderson	1	1	75	0	0
Hancock	1	0	0	0	1
Total	28	18	2,126	9	1

Ohio County Wells

The big producing wells of the week were found to a large extent in the Barnett Creek Church Pool, and at the same time a number of dry holes were encountered in among the good producers. Among the large producers were the Ohio Oil Co.'s No. 2 on the Jim Kirk 100 acres, between the Bartlett Pool and the Barnett Creek Pool, which is reported good for around 400 bbls. initial and one of the good wells that may yet connect up the two rich pools. On the Charles Trodgen 60 acres between the Mason-Bartlett and Kirk leases, Rex-Pyramid Oil Co. got a dry hole in No. 2, while No. 3, same farm, produced an initial of 240 bbls.

In the northern part of the Barnett Creek Pool, the Rex-Pyramid Oil Co.'s No. 7 on the Cicero Wade 100 acres, failed to show any oil in the Stray sand, from which the big wells of the pool found their oil, and will go down and try out the Jett sand, and if not found there may go to the deeper Barlow sand. No. 8 on the Wade farm produced an initial of 200 bbls. Same company's No. 8 on the William Morgan, in the Morgan Pool, northwest of the Barnett Creek Pool, showed an initial of 185 bbls. Same company's No. 11 on the Sallie Hoover farm, same pool, produced an initial of 140 bbls. in the Stray sand Same company's No. 2 on the Rhodes farm, in the Bartlett Pool, is reported dry.

Hupp and Duff's No. 9 on the Mason-Bartlett lease in the Barnett Creek Pool, is reported at 400 bbls. initial, and No. 10 rated at 150 bbls. initial. No. 11, same lease, was dry and also No. 13, while No. 12 produced an initial of 180 bbls.

In the Deanfield Pool, James C. Ellis and others' second test, 200 feet from the north line and 600 feet from the west line of the Albert Payne 123 acres, produced 40 bbls. the first 24 hours. Same parties' No. 1 on the Greer heirs in the Whittaker Pool, produced 15 bbls. initial and No. 6 on the Allen Ralph, same pool, is reported a dry hole.

In the Friendship Church Pool, Dr. Sirman Co.'s No. 30 on the Nancy Farmer lease, is reported around 35 bbls., and No. 31, same farm, at 60 bbls. initial.

In the Barnett Creek Pool the Standard Oil Co. of Kentucky found a dry hole in No. 2 on the E. J. Patton lease.

Near Ralph's Store, J. E. Hare and others' test on the W. L. Howard lease, pumped 5 bbls. In this well a string of 339 feet of casing was set, oil sand from 355-66 feet, total depth 375 feet.

E. G. Purtle and others' No. 4 on the Charles Roach north 130 acres, produced 15 bbls. the first 24 hours from a total depth of 570 feet. In this well a string of 545 feet of casing was set and the pay found from 554-66 feet.

Penn-Indiana Oil Co.'s No. 6 Will Griffith farm, pumped 6 bbls. initial at a total depth of 443 feet after a 60-quart shot. In this well a string of 417 feet of casing was set and pay sand at from 417-25 feet.

Snowden & McSweeney's No. 1 M. Chapman lease, southwest of Taffy, is reported a duster.

D. J. White and others' No. 3, 200 feet from the south line and 600 feet from the west line of the Ernest Beckett 90 acres, in the Deanfield area, pumped 25 bbls. the first 24 hours.

Daviess County Producers

In the Red Hill Field of Daviess County, the Petroleum Exploration Co.'s No. 1 on the J. H. Gray lease, produced an initial of 35 bbls.

In the Utica Field, Smith, Randolph and others' No. 11 on the Oscar Wells lease produced 75 bbls. from the Barlow sand.

McMahan & Combs' test in the northeast corner of the W. C. Smith farm, near Lyonia and east of the old Pellville Pool, in Hancock County, developed into a gas well showing 500,000 feet.

Southern Oil Producing Co. is reported to have made a nice oil strike on the Ed Farley, at Cordville and a mile north of the old Niagara Field, in Henderson County, and when put on the pump showed 15 bbls. an hour and estimated good for around 75 bbls., the sand being topped at 690 feet and 27 feet of sand was penetrated.

Field Pickups

No new completions have been reported from the Greenville Field, in Muhlenberg County, but several wells are about due for completion.

Southern Oil Producing Co. is drilling No. 1 on the Scott heirs lease, in the Niagara Field of Henderson County.

Missouri-Kansas Pipe Line Co. is working on the Richards farm, 1,500 feet south of a gas well on the Lester farm, in Hopkins County.

White and Vickers are drilling No. 3 on the Willie Mills lease, east of Oklahoma, in Ohio County. Nos. 1 and 2 on this lease are across the line in Daviess County.

Cumberland Petroleum Co. is due in with No. 20 on the Bob Hamilton farm, in the Ambrose-Weller Pool, east of Mount Moriah Church also northeast of Taffy in Ohio County.

Doctor Buckner and others' No. 1 on the Joe Cheek farm, in Ohio County, was dry in the Jett sand and has shut down, but probably will go to the Barlow sand.

James C. Ellis and others' No. 9 on the Otis Greer farm, in the Whittaker Pool, Ohio County, was dry in the Jett sand and will be drilled to the Barlow sand. Same parties are drilling No. 7 on the Allen Ralph in the Whittaker Pool, same county, where No. 6 was a duster.

The Mecca Oil Co. is starting No. 1 on the J. H. Fuqua lease, north of the Jones Pool, in Daviess County and southwest of Whitesville. This well is in advance of production.

Missouri-Kansas Pipe Line Co. is starting a well on the L. D. Phillips lease, near Lyonia, east of the old Pellville Pool in Hancock County.

CENTRAL WEST FIELDS

(Continued from Page 76)

ern Sullivan and southern Vigo Counties, and directly west of Bloomington. Monroe County lies east of Owen County, and it is in Monroe County that the Petroleum Exploration Co., of Sistersville, W. Va., is now drilling two tests, one on the Howell farm and another on the Mary E. Shirley. This company has leased up a huge block of acreage in Monroe county and will give it a thorough testing.

ILLINOIS

Some nice shallow sand wells are reported from the Dupo Field, in Sugar Loaf Township, St. Clair County, in western Illinois, where the oil is found in the Trenton Rock formation. The Ohio Oil Co's No. 16 Matilda Dyroff farm, being 80 feet from the north line and 460 from the west line of the lease, in the NW SE, Section 28, produced 45 bbls. initial from 514 to 569 feet, and No. 17 well, 80 feet from the north line and 300 feet west of the highway on the same farm, also produced 45 bbls. from 469 to 533 feet. Morris & Yeager and others' No. 3 Alice Dettenbach, NE Section 28, produced an initial of 40 bbls. from 493 to 540 feet, and No. 4 same farm had an initial of 40 bbls. from 480 to 530 feet.

Moody & Seagraves' No. 2 on the Missouri Pacific Railroad right-of-way, Section 21, Sugar Loaf Township, produced an initial of 25 barrels from 508 to 540 feet. Cole & Esther's No. 1 Louis Lindemann lot, SE Section 21, same township, produced an initial of 50 bbls. from 496 to 535 feet. Delaney and others' No. 2 H. A. Stroud, SE Section 21, produced 17 bbls. initial from 515 to 548 feet.

In Macoupin County, in western Illinois, Duncan's Foundry and Machine Works drilled in a dry hole in No. 6 on the Hye Weyan, Section 9, Cahokia Township, at a depth of 649 feet.

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WILDCAT OPERATIONS IN LOUISIANA-ARKANSAS

(Continued from Page 58)

DESOTO PARISH

Benson Oil Co.'s No. 1 Hill, 1,3455 ft. S, 1,26[illegible] ft. W, NE cor., Sec. 4-10-13 ..... Began drlg. Oct. 13; S.D. for wtr. 100 ft.

P. J. Becker, trustee's No. 1 Tull, SW cor. NE NE, Sec. 23-12-15 ..... Fishing 7 joints drill stem; T.D. 2,475 ft.

Longstreet Synd.'s No. 1 Ramsey, NE cor. SW NE, Sec. 33-13-16 ..... Changing to heavy rig and arranging to sidetrack; T.D. 2,802 ft.

Magnolia Pet. Co.'s No. 1 Anna Mason, 990 ft. S, 990 ft. E, NW cor. SW, Sec. 27-12-11 ..... Drlg. hard sand 1,709 ft.

FRANKLIN PARISH

Davis et als' No 1 Moore, 600 ft. W, 200 ft. S, NE cor. Sec. 12-11-6 ..... S.D. 1,430 ft.

Franklin Oil & Gas Co.'s No. 1 J. T. O'Brien, 300 ft. N, 300 ft. E, SW cor. NW, Sec. 17-15-9 ..... Rigging up.

MOREHOUSE PARISH

J. P. White's No. 1 Chess-Wymond, Sec. 32-19-4 ..... Tested S.W. 3,025 ft; W.O.

Rainbow Oil Co.'s No. 1 Louisville Cooperage Co., 990 ft. S and E, NW cor. NE, Sec. 33-22-8 ..... Derrick.

NATCHITOCHES PARISH

S. D. McDaniel's No. 2 Clark & Morse, 800 ft. E, 350 ft. N, C, Sec. 23-5-6 ..... Tested 1,000,000 ft. gas and S.W. 8 ft.; S.D. for orders; T.D. 2,536 ft.

Nichols & Wilder's No. 1 Clark, 150 ft. W, 250 ft. N, SE cor., Sec. 10-10-8 ..... Rigging up.

Robeline O. & G. Co.'s No. 1, NE SW, Sec. 7-8-9 ..... Drill stem stuck; waiting orders; claim show gas; T.D. 3,230 ft.

OUACHITA PARISH

Farish & Russell's No. 1 School fee, NE, Sec. 16-16-4 .... S.D.; W.O. 4,350 ft.

S. D. Hunter's No. 1 West Va. Lbr. Co. N½ NE, Sec 24-18-5 ..... Cmtd. 15½-in. 147 ft; 12½-in. 820 ft.

RAPIDES PARISH

Ayers Bros.' No. 1 Wickliff, 2,790 ft. N, 150 ft. E, SW cor., Sec. 9-5n-2e ..... S.D. for water; T.D. 900 ft.

RED RIVER PARISH

W. D. Ball's No. 1 Krumholtz, 660 ft. S, 660 ft. S, NW cor., Sec. 32-14-10 ..... Drlg. 930 ft.

Benedum & Trees Oil Co.'s No. 1 Franklin Realty Co., 350 ft. E, 350 ft. S, NW cor., Sec. 29-11-9 ..... Drlg. 3,460 ft.

Eylers O. & G. Co.'s No. 4 Chaffraix, 150 ft. S, 170 ft. W, NE cor. SW SE, Sec. 30-12-10 ..... Cmtd. 6 in. 2,580 ft. coring 2,611 ft.

LeGrande et als' No. 1 Sample, Sec. 11-14-11 ..... Rigging up.

D. H. Riddick's No. 1 Johnson, 600 ft. N, 500 ft. W, SE cor., Sec. 17-12-10 ..... Now Eylers O. & G. Co.'s; began drlg. Oct. 20; cmtd. 10-in. 203 ft.

RICHLAND PARISH

Austin & McDonald's No. 1 Hunt, 594 ft. N, 660 ft. E, SW cor., Section 13-17-5 ..... Derrick.

Austin & McDonald's No. 2 Millsaps, SW cor., Sec. 17-17-6, Waiting orders; T.D. 2,679 ft.

Austin & McDonald's No. 3 Millsaps, 1,980 ft. S, 660 ft. E, NW cor., Sec. 16-17-6 ..... Tested S.W.; W.O. 2,477 ft.

Austin & McDonald's No. 4 Millsaps, NW cor., Sec. 16-7-6. Location.

Austin & McDonald's No. 5 Millsaps, 2,640 ft. N, 1,320 ft. W, SE cor., Sec. 8-17-6 ..... Derrick.

Palmer Corp.'s No. 2 Miles, 723 ft., E, 660 ft. S, NW cor. NE, Sec. 12-17-6 ..... Cmtd. 6-in. 2,315 ft.

United Carbon Co.'s No. 1 Thornby, 660 ft. W, 650 ft. N, SE cor. NW NE, Sec. 12-16-6 ..... Fishing for liner stuck 90 ft. off bottom; T.D. 2,460 ft.

SABINE PARISH

R. L. Gay's No. 1-A Bowman-Hicks, 900 ft. S, 200 ft. E, C, Sec. 34-8-12 ..... Drlg. hard lime 1,577 ft.

R. L. Gay's No. 5 Bowman-Hicks, 1,120 ft. W, 920 ft. N, SE cor., Sec. 14-7-14 ..... Began drlg. Oct. 20; cmtd. 10-in. 62 ft.

R. L. Gay, trustee's No. 1 Long-Bell Lbr. Co., NE cor. NW NW, Sec. 26-8-14 ..... Did not set 6-in. 3,425 ft.; drlg. 3,492 ft.

R. L. Gay, trustee's No. 2 Sabine Lbr. Co., Sec. 23-7-14.. Rptd. 6-in. cmt. 3,547 ft. in error; drlg. 3,598 ft.

Sabine O. & G. Co.'s No. 1 Anderson, 200 ft. N, 200 ft. E, SW cor. SW NW, Sec. 19-18-13 ..... Location.

A. H. Trevor's No. 1 Long-Bell, 330 ft. S, 330 ft. E, NW cor. SW NW, Sec. 29-8-13 ..... Reported dry and aband. 3,535 ft., in error; fished out bailer; tested 250,000 ft. gas and small show oil 3,535 ft.

UNION PARISH

Fred Stovall's No. 1 Stovall, 1,320 ft. E, 350 ft. N, SW cor., Sec. 32-23-4 ..... Rig up.

WEBSTER PARISH

F. M. Fuller's No. 1 Monzingo, 300 ft. N, 200 ft. W, SE cor., Sec. 27-18-8 ..... Rig up.

Paul C. Warren et al's No. 1 Martin, 305 ft. N, 212 ft. E, SW cor. Sec. 20-20-9 ..... Derrick.

WEST CARROLL PARISH

Palmer Corp.'s No. 1 Marston, 3,958 ft. N, 1,855 ft. E, SW cor., Sec. 12-19-10 ..... Cmtd. 6-in. 2,303 ft.

ARKANSAS

ASHLEY COUNTY

Ark. Fuel Oil Co.'s No. 1 Crossett Lbr. Co., 330 ft. E, 330 ft. S, NW cor., Sec. 1-19-7 ..... Derrick.

J. G. Marcum, trustee's No. 1 McGarry, 300 ft. W, 100 ft. S, C, Sec. 9-19-4 ..... Top gas rock 2,846 ft.; reaming to bottom; T.D. 3,090 ft.

CLARK COUNTY

Wm. Henry, trustee's No. 1 Clark, Sec. 34-9-21 ..... S.D. 1,200 ft.

COLUMBIA COUNTY

Talbot & Markle's No. 1 Copeland, 300 ft. S, 300 ft. W, NE cor. SE NW, Sec. 31-19-19 ..... Top Blossom 2,966 ft.; drlg 3,317 ft.

FAULKNER COUNTY

Gold Creek Oil & Gas Co.'s No. 2 Stermer, SE cor. NW SE, Sec. 17-4-13 ..... Rigging up.

GARLAND COUNTY

Givens et als' No. 1 Garrett, 660 ft. S, 660 ft. W, C, Sec. 1-3-19 ..... Began drlg. Aug. 10, 1926; hard sand 3,168-96 ft.; claims show gas; drlg.

GRANT COUNTY

Jones & Watkins' No. 1 Meek, Sec. 5-4-11 ..... T.A. 2,400 ft.

JOHNSON COUNTY

Ark.-La. P. L. Co.'s No. 2 Bynum, Sec. 12-10-24 ..... Drlg. shale 3,700 ft.

LITTLE RIVER COUNTY

A. L. Buck's No. 1 Greason, NW NW, Sec. 25-12-32 .... Drlg. 1,550 ft. in red beds; rptd. drlg. 2,020 ft. in error.

McDonald & Shaw's No. 1 W. E. Black, 240 ft. N, 450 ft. W, SE cor. SE NE, Sec. 12-13-28 ..... S.D. 1,542 ft.

LOGAN COUNTY

Ark. Nat. Gas Corp.'s No. 1 Hanna, Sec. 26-7-23 ..... Drlg. heaving shale 4,140 ft.

MADISON COUNTY

Phillips Pet. Co. and F. S. Craver's No. 1, C, Sec. 11-14-28. Tested 250,000 ft. gas 63 ft.; drlg sandy lime 1,300 f..

MILLER COUNTY

E. B. Lens et als' No. 1 Bossier Co., NW cor. Sec. 13-15-26 Drlg. 2,920 ft.

OUACHITA COUNTY

Copenhaven et als' No. 1 Warnick, Sec. 2-15-17 ..... S.D. 2,190 ft.

C. H. McDonald's No. 1 Fogle, Sec. 13-14-16 ..... S.D. 2,301 ft.; W.O.

The Texas Co.'s No. 1 Avera, 250 ft. N, 250 ft. E, SW cor., Sec. 35-15-15 ..... Cleaning out; T.D. 1,984 ft.

Wesson et als' No. 1 Booth, Sec. 12-15-19 ..... S.D. 2,203 ft.

POPE COUNTY

Ark.-La. P. L. Co.'s No. 1 McFaddin, Sec. 15-9-21 ..... Est. 40,000,000 ft. gas, blowing wild; T.D. 1,051 ft.

Cosden Oil Co.'s No. 1 Mo. Pac. R.R., 660 ft. N, 660 ft. E, SW cor. NW SE, Sec. 13-9-9 ..... Rigging up.

PRAIRIE COUNTY

Transcontinental Oil Co.'s No. 1 Louis Novak, 330 ft. E, 330 ft. N, SW cor. SW NE, Sec. 36-2n-6 ..... Began drlg. Oct. 20; cmtd. 12½-in. 184 ft.; drlg 1,050 ft.

UNION COUNTY

Addie & Modisette's No. 1 Union Sawmill, SW cor. SW SE, Sec. 25-19-12 ..... Location.

Ark. Drlg. Co.'s No. 1 Norris, 150 ft. S, 150 ft. W, NE cor. SE SE, Sec. 17-18-12 ..... Drlg. 2,000 ft.

Sam Arrendale's No. 1 Gallagher & Nelson, 200 ft. N and W, SE cor. Lot 5, Sec. 18-18-17 ..... S.D. 2,268 ft.

W. M. Coates, trustee's No. 1 McDuffie, Sec. 32-19-17 .... Cmtd. 6⅝-in. 3,942 ft; to test 4½-ft. sand; T.D. 4,057 ft.

O. W. Estes' No. 1 Felsenthal, 330 ft. S, 330 ft. W, NE cor. NE NW Sec. 2-18-15 ..... S.D; W.O. 125 ft. oil and S.W. in hole; T.D. 2,191 ft.

Federal Pet. Co.'s No. 1 Union Sawmill fee, NW cor. NE SW, Sec. 5-17-12 ..... Rigging up.

E. M. Jones' No. 1 Loutre Lbr. Co., NE cor. NW SW, Sec. 17-19-14 ..... Drlg. 2,842 ft.

E. M. Jones' No. 1 Hardy & Murphy, 216 ft. N, 256 ft. W, SE cor. SW, Sec. 34-19-14 ..... Drlg. 3,703 ft.

Stark et als' No. 1 Ainsworth, NE cor. NW NE, Sec. 8-19-16 ..... Derrick.

T. J. Woodley's No. 1 First Natl. Bank, NW cor., Sec. 34-19-18 ..... Derrick.

VAN BUREN COUNTY

Glenn Cole et als, trustee's No. 1 Scanlan, 200 ft. S, 200 ft. W, NE cor. SE NW, Sec. 5-19-13 ..... S.D. 50 ft.

WASHINGTON COUNTY

O'Hara & Shetterly's No. 1 Boyd, SE cor. SE NE, Sec. 12-16-32 ..... Spudded Sept., 1928; S.D. 140 ft.; resumed drlg. Aug. 25; U.R.; T.D. 150 ft.

C. H. Willoughby's No. 1 Jones, Sec. 34-16-30 ..... Cmtd. 6-in. 1,320 ft.; S.D. 1,342 ft.

Lincoln Leaseholding Synd.'s No. 1 Lincoln, Sec. 30-15-32. S.D. 1,040 ft.; repairs.

WHITE COUNTY

Letona Synd.'s No. 1 Letona, SE cor. NW SW, Sec. 35-9-8. Drlg. black caving shale 3,490-3,500 ft.

EAST TEXAS

CAMP COUNTY

Rogers et als' No. 1 Enfelt, R. M. Montgomery Sur. .... Tested dry 1,870 ft.; S.D. 1,920 ft.

RED RIVER COUNTY

D. M. Buffington's No. 1 Hossier, E. Hughhart Sur. .... Drlg. 2,050 ft.

Shad Harper's No. 1 W. R. Garland, J. Wagley Sur. ..... S.D. 1,862 ft.

Johnson Pet Co.'s No. 2 Randolph, Edward Dean Sur.. S.D. 2,000 ft.

SHELBY COUNTY

Benedum & Trees Oil Co.'s No. 1 Pickering Lbr. Co., 300 ft. S, 300 ft. W, NE cor. Lot 20, D.T.F. Yordt Sur... Drlg 2,635 ft.

Chapperall Oil Co.'s No. 2 Holt, Matthew Moore Sur... S.D. for orders 3,004 ft.

Gulf Ref. Co.'s No. 2 Pickering, 463 ft. S, 29 ft. W, SW cor. P. W. Harvey Sur. in J. H. Patterson Sur. ..... Began drlg. Oct. 9; cmtd. 9-in. 1,667 ft.

MISSISSIPPI

ALCORN COUNTY

Alcorn Pet. Co.'s No. 1 Matthews, SE cor., Sec. 14-2s-7e.. Drlg. 2,700 ft.

CHICKASAW COUNTY

Hightower & Golson's No. 1 Flemming, NE cor., Sec. 20 13-3 ..... Quicksand 1,240 ft.

HINDS COUNTY

Harry Gerson's No. 1 Edward House, Blk. 16, West Jackson Subd., City of Jackson, in Twp. 5n, Range 1e .... Rig up.

Oscar Brown's No. 1 Riverside (formerly Hennessee et als') SE cor. SE SW, Sec. 23-16-5 ..... Set 12½-in. 30 ft; S.D. 1,050 ft.

Mrs. Reeder et als' No. 1 State, SE cor. NW NW, Sec. 25-6-1e ..... S.D. 2,895 ft.

South Christian Institute's No. 1 fee, SE SW, Sec. 29-6-4. Waiting on csg. to set; T.D. 1,203 ft.

HUMPHREYS COUNTY

E. C. Steele et als' No. 1 C. B. Box, SE cor. SE NE, Sec. 25-14-4w ..... Set 12½-in. 60 ft.; S.D.

LAUDERDALE COUNTY

Lauderdale O. & G. Co.'s No. 1 Lackey, 990 ft. S and E, NW cor. NE, Sec. 2-7-16 ..... Cored sand, shale and gumbo 2,494-2,500 ft.; S.D. 2,786 ft.

Meridian O. & G. Co.'s No. 1 Hauser, Sec. 33-8-18 .... S.D., gumbo 2,410 ft.

J. R. Smith Oil Co.'s No. 1 C. F. Craig, Sec. 2-6-14 ..... Derrick.

LAFAYETTE COUNTY

Banks-Goode et als' No. 1 May, 113½ rods S, 26 rods E, NW cor. SW, Sec. 22-10-1w ..... Derrick.

LINCOLN COUNTY

La.-Miss. Oil Co.'s No. 1 Pat Case, NE NE, Sec. 21-8-6 ... Spudded Feb. 17, 1929; S.D. 50 ft.; resumed drlg. Aug. 12; cmtd. 12½-in. 368 ft.; S.D., salt water sand 1,213 ft.

MONROE COUNTY

Amory Dev. Co.'s No. 1 Bourland, Sec. 2-13-19 ..... S.D.; waiting for 5 3/16-in. csg. 2,580 ft.

Amory Pet. Co.'s No. 1 Hall, Sec. 8-13-19 ..... Fish. for liner and tools 3,045 ft.

Park Bowser et als' No. 1 Cowart, second hole, Sec. 2-12-19 ..... S.D. 30 ft.

RANKIN COUNTY

Home Oil Prod. Co.'s No. 1 E. P. Rainey, NW NW, Sec. 13-5-1e ..... Drlg. sand rock 1,860 ft.

WARREN COUNTY

El Dorado Oil Co.'s No. 1 Dornbush, Sec. 8-18-5 ..... Drlg. 2,400 ft.

YALOBUSHA COUNTY

Philip Bros.' No. 1 James, Sec. 20-11-5 ..... Drlg. dark slate, streaks of sand 3,252 ft.

Carter Oil Co. and J. D. Collett's No. 1 Blackmur, 330 ft. S, 990 ft. W, C, Sec. 14-11-4 ..... Location.

TENNESSEE

DECATUR COUNTY

Standard Oil Co. of La.'s No. 1 Wyatt ..... Drlg 1,285 ft.

Chester County Oil Co.'s No. 1 Montgomery ..... Cmtd. 6-in. 1,040 ft.; drlg. hard gray lime 1,165 ft.

ALABAMA

CHOCTAW COUNTY

Robinson & Greeer's No. 1 Douglas Oil Co., 320 ft. N, C, Sec. 15-19-2 ..... Coring 3,400 ft.

LAMAR COUNTY

Briggs & Knapp's No. 1 Wefel, Sec. 25-12-14 ..... Reaming to bottom; T.D. 1,180 ft.

SUMTER COUNTY

B. W. Bates' No. 1 fee, Sec. 3-18-1 ..... U.R. surface csg. at 300 ft.; to set 6-in

WASHINGTON COUNTY

S. A. Hobson's No. 1 Hobson Bros., Sec. 9-8-2 ..... S.D; S.W. flow at 1,450 ft., T.D.

S. A. Hobson's No. 1 Wilson, Sec. 27-7-1 ..... S.D. 700 ft.

J. B. JOHNSON DIES

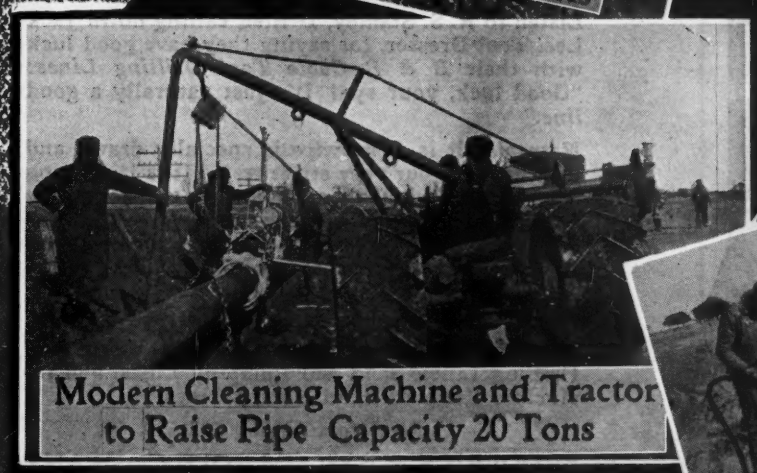
J. B. Johnson, formerly purchasing agent for the Tidal Oil Co. at Tulsa, died suddenly at McPherson, Kans., on October 22 where he was visiting with his mother. Mr. Johnson had been sick for some time and was returning to Tulsa from Rochester, Minn., where he had gone for medical advice and treatment. Mr. Johnson is survived by his wife, mother and one son, J. B., Jr., also one brother and four sisters, and has resided at 749 North Elwood Street, Tulsa, for several years. The body was buried in Tulsa.

THE LOW BID IS OFTEN THE HIGHEST

When the pipe is not laid within the time specified —when leaks develop—when the refiners fail to get their oil supply—the extra cost to the builder may run into the thousands. Even though there is a time penalty clause, the maker of the contract is rarely re-paid for the cost caused by delays and inexperienced workmen.

Truman-Smith know from experience the necessary equipment to use to finish on time; how to allow properly for expansion and contraction; how every joint should be welded, screwed or Dresser coupled. They employ only the highest skilled labor. When Truman-Smith undertake a job it is not only finished on time, but in A-1 condition. They may not always be the lowest bidder—but you can have no better insurance against these extra costs than to turn your pipe line construction over to this old, experienced Company.

One of Our Fleet of Modern Ditchers



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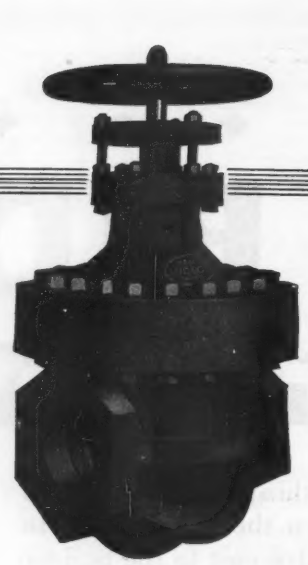

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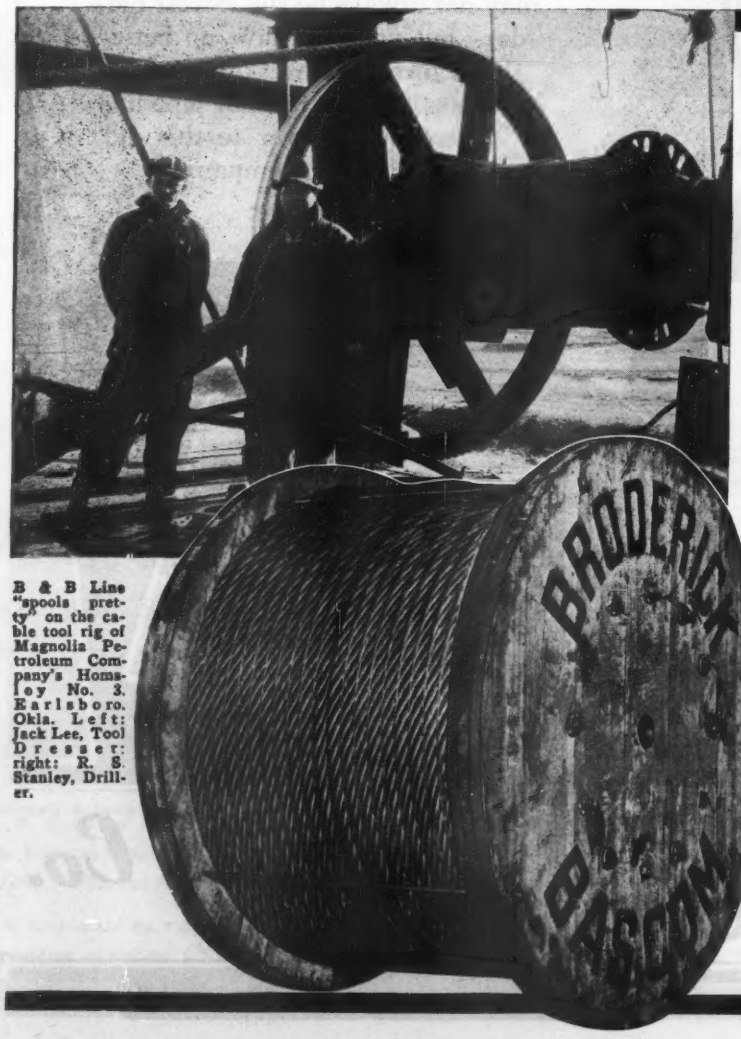

B & B Line "spools pretty" on the cable tool rig of Magnolia Petroleum Company's Homsley No. 3, Earlsboro, Okla. Left: Jack Lee, Tool Dresser; right: R. S. Stanley, Driller.

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BRODERICK & BASCOM DRILLING LINES

N 597

WILDCAT OPERATIONS IN TEXAS PANHANDLE

(Continued from Page 66)

Stubblefield et als' No. 1 Garner, 330 ft. from S and E lines, SE, Sec. 104, Blk. 4 ..... T.P. 2,990-3,024 ft; I.P. 25 bbls.; T.D. 3,080 ft; shot 80 qts. from 3,000-70 ft; C.O.

The Texas Co.'s No. 4 Lewis, 330 ft. N and E, SW cor. NW NE, Sec. 115, Blk. 4, I.&G.N.R.R. Sur. ..... Drlg. 2,275 ft.

The Texas Corp.'s No. 2 Noel, 990 ft. from S, 330 ft. W, NW, Sec. 187, Blk. B-3, I.&G.N. Sur. ..... Drlg. 2,975 ft.

CASTRO COUNTY

Colorado O. & R. Co.'s No. 1 M. Siemmons, SW cor., Sec. 73, Blk. M-17, B.S.&F. Sur. ..... Rig blown down.

Mystery Oil Co.'s No. 1 J. I. Crum, SE cor. NE, Sec. 333, Blk. M-6, S.K.&K. Sur. ..... S.D. 510 ft. for csg.

CHILDRESS COUNTY

C. L. Sloane et als' No. 1 B. P. Smith Sur. 49, F. P. Knott lands ..... S.D. 4,675 ft.

COCHRAN COUNTY

Continental Oil Co.'s No. 1 Slaughter-A, 330 ft. from W, 430 ft. from S lines, League 130, Carson County School land ..... Small show gas 4,745-50 ft; 3,000 ft. oil in hole 4,853 ft; T.D. 5,001 ft; P.B. 4,900 ft; oil pay 4,873-88 ft; swbd. 65 bbls. oil and 5 bbls. wtr; shot 150 qts. from 4,735-70 ft; no results.

Westbrook et als' No. 1 Slaughter, 400 ft. from S and E, Labour 67, League 118, Knox Co. School Lands ... Drlg. 1,400 ft.

DONLEY COUNTY

Blue Bonnett Oil Co.'s No. 1 Ball, 1,075 ft. from N line, 985 ft. from E line, Sec. 22, Blk. E, D.&P.R.R. Sur. .. T.D. 3,006 ft; contract depth.

Marine Oil Co.'s No. 1 Sawyer, C SW, Sec. 5, Blk. G, G.C.&S.F. Sur. ..... S.D. 3,510 ft.

Southland Oil Co.'s No. 1 Lewis, C SE 40 ac., Sec. 3, Blk. 29, H.&G.N.R.R. Sur. ..... S.D. 2,480 ft.

GRAY COUNTY

Adams Oil Co.'s No. 4 Morse, 330 ft. S and W, NE cor. Sec. 3, Blk. 26, H.&G.N.R.R. Sur. ..... Rigging up.

Alexander and Shell Pet. Corp.'s No. 1 Harrah-McKinney, 330 ft. S and W, NE cor. E½ SE, Sec. 163, Blk. 3, I.&G.N.R.R. Sur. ..... Fishing 2,290 ft.

Big Gray Oil Co.'s No. 1-A Saunders, 330 ft. N and E, SW cor. E½ NW, Sec. 40, Blk. 3, I.&G.N.R.R. Sur. .. Location.

British-American Oil Co.'s No. 2 Purviance, 330 ft. N and E, SW cor. E 160 ac., Sec. 61, Blk. B-2, H.& G.N.R.R. Sur. ..... Location.

Champlin Ref. and Danciger's No. 3 Cook-Faulkner, 330 ft. S and E, NW cor. W 120 ac. of E 200 ac., Sec. 30, Blk. B-2, H.&G.N.R.R. Sur. ..... Location.

Constantine et als' No. 1 Crews, 330 ft. S and W, NE cor. SW, Sec. 20, Blk. 30, H.&G.N.R.R. Sur. ..... Rigging up.

Crabtree Drlg. Co.'s No. 1 B. F. Talley, SW NE, Sec. 114, Blk. M-3, B.S.&F. Sur. ..... S.D. 2,740 ft.

Danciger O. & R. Co.'s No. 6 Beck, 330 ft. S, 990 ft. W, NE cor., Sec. 28, Blk. B-2, H.&G.N. Sur. ..... S.D. 2,739 ft.

Danciger O. & R. Co.'s No. 7 Beck, 330 ft. S, 1,650 ft. W, NE cor., Sec. 28, Blk. B-2, H.&G.N. Sur. ..... S.D. 2,690 ft; S.G. 2,397-2,455 ft.

Danciger et als' No. 11 Jackson, 330 ft. S, 1,320 ft. W, NE cor. NW, Sec. 88, Blk. B-2, H.&G.N. Sur. ..... T.D. 2,906 ft; set 8¼-in. csg.

Danciger O. & R. Co.'s No. 1 McLarty, 1,220 ft. from S, 330 ft. from W, W½ NW, Sec. 10, Blk. 1, A.C. H.&B. Sur. ..... 12,000,000 ft. gas 2,275-2,350 ft; 50,000,000 ft. gas 2,275-2,490 ft; drlg. 2,620 ft; 18,000,000 ft. gas 2,500-2,620 ft.

Danciger O. & R. Co.'s No. 5 Morse, 330 ft. N and E, SW SW NW, Sec. 1, Blk. 26, H.&G.N.R.R. Sur. ..... Rigging up.

Danciger O. & R. Co.'s No. 1 Shaw, 330 ft. from S, 286 ft. from E of E 39½ ac., NW, Sec. 5, Blk. 1, A. C.H.&B. Sur. ..... T.D. 2,588 ft.

Danciger O. & R. Co.'s No. 1 Williams, 330 ft. from N, 330 ft. from E, S½ NW ..... Estimated 15,000,000 ft. gas 2,610-70 ft; S.D. 2,720 ft.

Dunlop's No. 4 Morse, 330 ft. N and E SW cor. SW, Sec. 17, Blk. A-9, H.&G.N.R.R. Sur. ..... Drlg. 2,030 ft.

Sines & Reiger's (formerly Eslick et als') No. 1 Mrs. J. A. Hopkins, NW cor. W 80 ac. of SW, Sec. 84, Blk. B-2, H.&T.C. Sur. ..... S.D. 3,206 ft.

Gardner Bros. and Collins' No. 2 Saunders, 955 ft. from S, 330 ft. from E of W 68 ac. E½ J. G. Eustice Sur. .. Location.

Gulf Prod. Co.'s No. 3 Worley-A, 330 ft. N, 1,650 ft. W, SE SW, Sec. 36, Blk. 3, I.&G.N.R.R. Sur. ..... Temp. abd. at 3,163 ft.

Guernsey Oil Co.'s No. 1 Pope, 330 ft. from N and W lines, W½ SW, Sec. 173, Blk. 3, I.&G.N. Sur. ..... Drlg. 2,380 ft.

Guernsey Oil Co.'s No. 1 Vaniman, 330 ft. N and W, E½ NE, Sec. 175, Blk. 3, I.&G.N.R.R. Sur. ..... Spudding.

Haymer O. & G. Co.'s No. 1 Morse, 330 ft. each way out of SE cor. E½ SE, Sec. 45, Blk. A-9, H.&G.N. Sur. ..... S.D. 350 ft; to skid rig north.

Herragan Oil Co.'s No. 1 Bradford, 330 ft. from N, 990 ft. from E, Sec. 123, Blk. B-2 ..... First show gas 2,475-80 ft; 15,000,000 ft. gas 2,515-40 ft; T.D. 2,708 ft.

Hinerman Bros.' No. 1-A Taylor, 330 ft. from NE E½ NE, Sec. 8, Blk. H, A. H. Wallace Sur. ..... S.D. 1,077 ft.

Humble O. & R. Co.'s No. 1 Chapman, 330 ft. from N and E, NW, Sec. 69, Blk. 25, H.&G.N. Sur. ..... Drlg. 2,300 ft.

Humble O. & R. Co.'s No. 3 Jackson, 280 ft. from E line, 330 ft. from N line of E 110.5 ac., Sec. 90, Blk. B-2, H.&G.N.R.R. Sur. ..... S.G. 2,533 ft; S.O. 2,782 ft; drlg. 2,928 ft.

Humble O. & R. Co.'s No. 4 Jackson, 976 ft. N, 330 ft. E, SW cor. E 95.25 ac., Sec. 90, Blk. B-2, H.&G.N. Sur. S.G. 2,271 ft; S.D. 2,869 ft.

Humble O. & R. Co.'s No. 1 Palmer, 330 ft. from N and E lines, of W 100 ac., Sec. 31, Blk. B-2, H.&G. N. Sur. ..... Drlg. 3,100 ft; 700 ft. oil in hole from 3,080 ft; swbd. dry.

Magnolia Pet. Co.'s No. 7 Bowers, 990 ft. S and E, NW cor. NW, Sec. 63, Blk. B-2, H.&G.N.R.R. Sur. ..... Drlg. 2,785 ft.

Magnolia Pet. Co.'s No. 8 Bowers, 990 ft. N and E, SW NW, Sec. 63, Blk. B-2, H.&G.N.R.R. Sur. ..... Drlg. 2,305 ft.

Magnolia Pet. Co.'s No. 4 Magnolia, 990 ft. S and 330 ft. W, NE cor. NE, Sec. 11, Blk. 3, I.&G.N.R.R. Sur. . Drlg. 695 ft.

Magnolia Pet. Co.'s No. 1 Wright, 330 ft. S and W lines, S½ SW, Sec. 13, Blk. 3, I.&G.N. Sur. ..... 15,000,000 ft. gas 2,707-10 ft; S.D. 2,710 ft.

Magnolia Pet. Co.'s No. 2 Wright, 820 ft. from W, 330 ft. from S, S½ SW, Sec. 13, Blk. 3, I.&G.N. Sur. .... S.D. 2,702 ft.

McMan O. & G. Co.'s No. 4 Jackson, 970 ft. N, 330 ft. E, SW cor. W 95.25 ac. of E 190.5 ac., Sec. 90, Blk. B-2, H.&G.N. Sur. ..... S.D. 2,725 ft; S.O. 2,630 f.; S.G. 2,610-12 ft.

Oil Operators' No. 1 Bowers, 330 ft. from N, 330 ft. E, Sec. 93, Blk. B-2, H.&G.N. Sur. ..... Show oil and gas 2,400-17 ft; S.D. 3,090 ft; S.O. 3,036-55 ft; first gas 2,483 ft; increased at 2,500 ft., 2,544 ft. and 2,950 ft.

Operators Oil Co.'s No. 1 Lovett, 330 ft. from N and W line, W½ NE, Sec. 57, Blk. B-2, H.&G.N. Sur. .... Gas 2,390 ft; S.O. 2,837-47 ft; T. D. 3,067 ft; 1,000 ft. oil in hole.

Operators Oil Co.'s No. 5 Cook-Faulkner, 990 ft. N, 330 ft. W, SE W 90 ac., Sec. 30, Blk. B-2, H.&G.N. Sur.. S.D. 2,748 ft; standardizing.

Operators Oil Co.'s No. 6 Cook-Faulkner, 330 ft. S and E, NW cor., Sec. 30, Blk. B-2, H.&G.N.R.R. Sur. .... S.G. 2,424 ft. and 2,477 ft; S.D. 2,750 ft.

Operators Oil Co.'s No. 7 Cook-Faulkner, 330 ft. S, 320 ft. E, NW cor., Sec. 30, Blk. B-2, H.&G.N. Sur. ..... S.G. 2,380 ft; S.D. 2,691 ft.

Operators Oil Co.'s No. 8 Cook-Faulkner, 330 ft. S, 1,310 ft. E, NW cor., Sec. 30, Blk. B-2, H.&G.N.R.R. Sur.. S.D. 2,685 ft.

Phillips Pet. Co.'s No. 1 Eakin, 330 ft. from S, 330 ft. from W, Sec. 56, Blk. 25, H.&G.N.R.R. Sur. ..... S.O. 2,245-55 ft; 1,000,000 ft. gas 2,170-2,255 ft; S.D. 4,815 ft.

Phillips Pet. Co.'s No. 1 Jackson, 330 ft. each way from NE cor. NE, Sec. 58, Blk. B-2, H.&G.N.R.R. Sur. .... S.O. 2,712-22 ft; 250 ft. oil in hole; set 5-in. csg. 3,013 ft; 7,000,000 ft. gas 3,130 ft; 1,000,000 ft. gas 3,144 ft; T.D. 3,260 ft; P.B. 3,820 ft; C.O.

Phillips Pet. Co.'s No. 6 Jackson, 330 ft. from N, 990 ft. from E line, S½ NE, Sec. 88, Blk. B-2, H. &G.N.R.R. Sur. ..... T.D. 3,030 ft.

Phillips Pet. Co.'s No. 6 Palmer, 330 ft. S and W, NE cor., Sec. 81, Blk. 2, H.&G.N.R.R. Sur. ..... S.D. 2,743 ft.

Plains Drlg. Co.'s No. 1-A Chapman, 330 ft. from S and W, NE, Sec. 10, Blk. 26, H.&G.N. Sur. ..... S.G. 2,240 ft; 15,000,000 ft. gas 2,240-90 ft; T.D. 2,490 ft.

Prairie O. & G. Co.'s No. 1 Langham, 330 ft. N and E, SW, Sec. 1, Blk. B-2, H.&G.N.R.R. Sur. ..... 60,000,000 ft. gas; 900 ft. oil in hole; T.P. 2,810-91 ft; T.D. 2,922 ft; shot 50 qts. 2,863-87 ft. and 100 qts. 2,887-2,922 ft; S.O. 2,810 ft; S.O. 2,857-59 ft., and 2,883-89 ft; swbd. 8 bbls. in 10 hrs.

Queen Oil Co.'s No. 1 Lovett, 330 ft. N and W, W½ NE, Sec. 35, Blk. B-2, H.&G.N.R.R. Sur. ..... Location.

Quillian et als' No. 1 Barrett, 330 ft. from N, 330 ft. from E, Sec. 131, Blk. 3, H.&G.N. Sur. ..... 20,000,000 ft. gas 2,660-2,705 ft; drlg. 2,825 ft.

Ray et als' No. 1 Noble, 240 ft. from S and 330 ft. from W line, W 80 ac., SW, Sec. 10, Blk. A-6, H.&G. N. Sur. ..... Rigging up.

Rierger & Steckoll's No. 1 Bohr, 330 ft. from S and E, Sec. 37, Blk. B-3, H.&G.N. ..... Drlg. 200 ft.

Shamrock O. & G. Co.'s No. 2 Saunders-Lincoln, 330 ft. N and W, SE cor. W½ NE, Sec. 3, Blk. 1, A.C.H. &B.R.R. Sur. ..... S.G. 2,270-2,305 ft; S.D. 2,435 ft.

Shamrock O. & G. Co.'s No. 3 Saunders, 330 ft. N and E, SW E½ SE, Sec. 4, Blk. 1, A.C.H.&B. Sur. ..... Drlg. 2,110 ft.

Shamrock O. & G. Co.'s No. 1 Taylor, 330 ft. each way out of NE cor. NW, Sec. 1, Blk. 2, H.&G.N. Sur. .... Fishing 1,490 ft.

Skelly Oil Co.'s No. 1 Chapman, 330 ft. from S and E, S½ NW, Sec. 69, Blk. 25, H.&G.N. Sur. ..... S.D. 2,125 ft.

Skelly Oil Co.'s No. 5 Jackson, 970 ft. N, 330 ft. W, SE cor. W 190 ac. of Sec. 90, Blk. B-2, H.&G.N. Sur. .... S.G. 2,572 ft; S.D. 2,844 ft.

St. Clair Oil Co.'s No. 1 Dial, 330 ft. S and W, NE cor. SE, Sec. 10, Blk. 25, H.&G.N.R.R. Sur. ..... Cellar.

St. Clair Oil Co.'s No. 1 Rowe, Sec. 32, Blk. R ..... S.D. 3,490 ft; hole full wtr.

St. Clair Oil Co.'s No. 1 L. S. Stockton, SE cor., Sec. 35, W. R. Lee Sur. ..... Spudded and S.D.

Stogner Meaders' No. 1 Taylor, 330 ft. from S and E, SW Sec. 7, Blk. H, A. H. Wallace Sur. ..... Fishing 2,035 ft.

Sun Oil Co.'s No. 4 Purviance, 330 ft. S and E, NW cor., Sec. 61, Blk. B-2, H.&G.N.R.R. Sur. ..... Drlg. 2,874 ft; 5,000,000 ft. gas 2,830-45 ft.

The Texas Co.'s No. 3-B Chapman, 330 ft. S and E, NW cor. SE, Sec. 69, Blk. 25, H.&G.N.R.R. Sur. ..... Drlg. 2,290 ft; 4,000,000 ft. gas 2,140-50 ft.

The Texas Co.'s No. 3 Comb-Worley, 330 ft. N and W, SE cor., Sec. 36, Blk. 3, I.&G.N. Sur. ..... 4,000,000 ft. gas 2,135-40 ft; S.D. 2,710 ft.

The Texas Co.'s No. 7 Cook-Faulkner, 330 ft. N. and W, SE cor. W 200 ac., Sec. 29, Blk. B-2, H.&G.N. Sur. .. Estimated 30,000,000 ft. gas 2,380-2,725 ft; drlg. 2,765 ft; spraying oil from 2,760-65 ft.

The Texas Co.'s No. 3 McLarty-B, 1,326 ft. S, 660 ft. E, NW E½, Sec. 10, Blk. 1, A.C.H.&B. Sur. ..... 4,000,000 ft. gas 2,135-40 ft; drlg. 2,315 ft.

The Texas Co.'s No. 14 Saunders, 955 ft. N, 330 ft. W, SE cor. W½ of J. G. Eustis Sur. ..... S.D. 2,400 ft.

The Texas Co.'s No. 15 Saunders, 330 ft. N and W, SE cor. W½ SE, Sec. 4, Blk. 1, A.C.H.&B. Sur. ..... Drlg. 2,255 ft.

Travis & Rieger's No. 1 Mackie, 330 ft. from N and E, Sec. 114, Blk. B-2, H.&G.N.R.R. Sur. ..... Drlg. 1,080 ft.

White Eagle O. & R. Co. et als' No. 2 Faulkner, 330 ft. from S and W, E 60 ac., Sec. 29, Blk. B-2 ..... Standardizing 2,476 ft.

Wright Wilson, trustee's No. 1 Chapman, 175 ft. from S and E line, N½ NW, Sec. 69, Blk. 25, H.&G.N. Sur.. S.D. with show oil 2,685 ft.

HOCKLEY COUNTY

World Oil Co.'s No. 1 Ellwood, 320 ft. from N and W lines, League 7, Wilbarger County School lands; elevation 3,363 ft; contract depth 5,000 ft. ..... S.D. 3,250 ft.

HUTCHINSON COUNTY

Alamosa Oil Co.'s No. 4 Sanford, 310 ft. S, 320 ft. W, NE cor. of N 160 ac. of S 240 ac., Sec. 85, Blk. 46, H.&T.C. Sur. ..... S.O. and wtr. 3,010-11 ft; C.O. 3,053 ft.

Continental Oil Co.'s No. 1-B Johnson, 330 ft. S and W, NE cor. NW, Sec. 6, Blk. 1, B.&B. Sur. ..... 10,000,000 ft. gas; drlg. 3,089 ft; 1,000 ft. oil in hole 3,088 ft.

Devore Oil Co.'s No. 1 Johnson Bros., 330 ft. from S and E line, NW SW, Sec. 28, Blk. Y, A.&B. Sur. ..... S.D. 2,950 ft.

Huey et als' No. 3 Smith et al, 330 ft. from N, 660 ft. from W, S 40 ac. of E 100 ac., SE, Sec. 12, Blk. Y. Drlg. 2,700 ft.

Midwest Expltn. Co.'s No. 1 Garner et al, 330 ft. N and W, SE cor. NE, Sec. 124, Blk. 4, I.&G.N. Sur. ..... Drlg. 2,595 ft.

Midwest Expltn. Co.'s No. 2 Gardner et al, 330 ft. N, 1,650 ft. W, SE cor. NE, Sec. 124, Blk. 4, I.&G.N. Sur... Drlg. 2,415 ft.

O. B. Penney's No. 2 Johnson Bros., 330 ft. from S line, 330 ft. from W line, W½ NE, Sec. 35, Blk. Y, A.&B. Sur. ..... 31,000,000 ft. gas 1,990 ft; drlg. 3,060 ft; S.O. 3,040-45 ft; I.P. 60 bbls.

Phillips Pet. Co.'s No. 1 Johnson Bros., 330 ft. from N and W lines, NW, Sec. 34, Blk. Y, A.&B. Sur. ..... Pay 2,951-72 ft; initial prod. 30 bbls. oil and 5,000,000 ft. gas; fishing 3,085 ft.

Phillips Pet. Co.'s No. 6 (Florence), 330 ft. each way from S and W lines, E½ ..... T.D. 2,876 ft; T.P. 2,805 ft; I.P. 70 bbls; shot 54 qts. 2,788-2,838 ft; C.O. 2,876 ft.

Prairie O. & G. Co.'s No. 4 Cal Merchant, 5,612 ft. S, 330 ft. E, NW, Sec. 37, Blk. 47, H.&T.C.R.R. Sur. .... C.O. 2,610 ft.

Reliance O. & G. Co.'s No. 2 Sanford, 330 ft. S and E, NW W½ of N 80 ac. of S 320 ac., Sec. 83, Blk. 46, H.&T.C. Sur. ..... Drlg. 2,060 ft.

Skelly Oil Co.'s No. 2 Lee Bivins, 306 ft. from E, 1,342 ft. from S line, S 160 ac. of N 320 ac., Sec. 84, Blk. 46, H.&T.C.R.R. Sur. ..... Drlg. 2,615 ft.

Sunny Jim Oil Co.'s No. 3 Pitts, 330 ft. N and W of most southerly SE cor., Sec. 9, Blk. M-21, T.C. Sur... Location.

The Texas Co.'s No. 3 Moore, 330 ft. S, 1,338 ft. E, NW cor. SW, Sec. 125, Blk. 4, I.&G.N.R.R. Sur. ..... Drlg. 517 ft.

Travelers Oil Co.'s No. 2 Cockrell, 350 ft. from E and S line, Sec. 8, Blk. B-3, D.&S.E. Sur. ..... 1,000,000 ft. gas 2,610-2,770 ft; drlg. 2,989 ft.

LAMB COUNTY

Graham O. & G. Co. et als' No. 1 Ellwood, CWL, Sec. 9, Blk. T, T. A. Thompson Sur. ..... S.D. 3,635 ft.

LIPSCOMB COUNTY

Brown et als' No. 1 Box T Ranch, SW NE, Sec. 612, H.&T.C. Sur. ..... Fishing 3,625 ft.

Okla. Public Service Co.'s No. 1 C. W. Jones, NE SW, Sec. 100, H.&T.C. Sur. ..... S.D. 4,790 ft.

LUBBOCK COUNTY

Center Oil Co.'s No. 1 Bowles Ranch ..... Small S.O. 1,133-40 ft; sand; S.D. 4,167 ft.

MOORE COUNTY

Amarillo Oil Co.'s No. 1 Read-A, C NW, Sec. 14, Blk. 13-12, D.&P. Sur. ..... 4,000,000 ft. gas; drlg. 3,130 ft.
Amarillo Oil Co.'s No. 1 Perkins-A, 330 ft. each way out of NW cor. NE, Sec. 76, Blk. 3 ..... Drlg. 2,782 ft.
Red River Gas Co.'s No. 1 J. M. Shelton, 330 ft. each way from SE cor., Sec. 52, Blk. 3, G.&M. Sur. ..... Drlg. 1,630 ft.
Dana O. & G. Co.'s No. 1 Anthony, C NW, Sec. 260, Blk. 44, H.&T.C.R.R. Sur. ..... S.D. 2,500 ft.
Fritch O. & G. Co.'s No. 1 Lee Bivins, C N 40 ac. of N 160 ac., Sec. 4, Geo. Mahan Sur. ..... 2,000,000 ft. gas 1,550-65 ft; S.D. 2,225 ft.

MOTLEY COUNTY

Explin. Co.'s No. 5 Matador, C, Sec. 45, Blk. J-B, C, B.&C.N.G.R.R. Sur. ..... Drlg. 2,900 ft.
Explin. Co.'s No. 6 Matador, 330 ft. from N line, 330 ft. from E line, Sec. 132, Blk. M ..... Drlg. 3,435 ft.
Matador Oil Corp.'s No. 1 Owens, C NE, Sec. 10, Blk. G, B.&B. Sur. ..... S.D. 580 ft.

POTTER COUNTY

Canadian River Gas Co.'s No. 1 Allison "A," 386 ft. from E line, 5,439 ft. from S line, Sec. 1, W. T. Palmer Sur. .. Drlg. 470 ft.

RANDALL COUNTY

W. A. Patterson's No. 1 Palo Duro, Sec. 60, Blk. K-14 .... S.D. 1,250 ft.

ROBERTS COUNTY

Big Bend Oil Co.'s No. 1 Ledrick, Sec. 7, Blk. 5-A ..... T.D. 5,992 ft; shot 10 qts. 5,270-93 ft; S.O. 5,288 ft; C.O.

WHEELER COUNTY

Lela O. & G. Co.'s No. 1 Williams & Laycock, 330 ft. from S, 209 ft. from W, W½ NW, Sec. 20, Blk. A-8, H.&G.N. Sur. ..... Fishing 1,755 ft.
Magnolia Pet. Co.'s No. 2 Laycock, 680 ft. N, 700 ft. E, SW cor. S½ SW, Sec. 10, Blk. 27, H.&G.N.R.R. Sur. .. Location.
Murchison & Fain's No. 4 Close, C NE NE, Sec. 75, Blk. 23, H.&G.N.R.R. Sur. ..... Drlg. 1,290 ft.
Shell Pet. Corp.'s No. 1 Ackley, C SW SE, Sec. 20, Blk. 24, H.&G.N. Sur. ..... 4,000,000 ft. gas 1,815-40 ft; drlg. 1,950 ft; 15,000,000 ft. gas 1,840-50 ft.
Staley-Wynne's No. 1 Hicks, C NW SE, Sec. 53, Blk. 17, H.&G.N.R.R. Sur. ..... Location.
The Texas Co.'s No. 1 Cuddleback, C SE SE, Sec. 18, Blk. 24, H.&G.N. Sur. ..... Drlg. 1,515 ft.
Upham Gas Co.'s No. 5 Close-Gooch, 30 ft. N, 660 ft. E, SW cor. SW NW, Sec. 81, Blk. 23, H.&G.N.R.R. Sur. ..... Location.
Upham's No. 1 Cuddleback, C SE SE, Sec. 2, Blk. 24, H.&G.N.R.R. Sur. ..... Cellar.
Vaughn et als' No. 3 Ackley, 330 ft. from N, 330 ft. from W, Sec. 4, Blk. 27, H.&G.N. Sur. ..... T.D. 1,840 ft; 5,000,000 ft. gas 1,-660-1,770 ft.
Wischkamper et als' No. 1 Curry, C NE SE, Sec. 53, Blk. 23, H.&G.N. Sur. ..... Fishing 1,790 ft; 10,000,000 ft. gas 1,750-90 ft.

WILDCAT OPERATIONS IN WEST TEXAS

(Continued from Page 65)

Duffey et al's No. 6 Cowden, 990 ft. from S, 1,650 ft. from E, Sec. 18, Blk. T. ..... Top pay 2,360 ft.; swedging casing; total depth 2,490 ft.; swabbed 100 bbls. first 6 hrs. after 50-qt. shot.
Gulf Prod. Co.'s No. 67 McElroy, 2,102 ft. S and 2,640 ft. W of NE cor., Sec. 201, Blk. F, C.C.S.D.& R.G.N.G.R.R. ..... Shut down 2,965 ft.; swabbed 55 bbls. oil.
Gulf Prod. Co.'s No. 69 McElroy, 1,442 ft. S and 330 ft. E of NW cor. Gulf's lease, Sec. 185, Blk. F, C.C.S.D. &R.G.N.G.R.R. Sur. ..... Drlg. 230 ft.
Gulf Prod. Co.'s No. 70 McElroy, 1,442 ft. S and 2,970 ft. W of NE cor. of Gulf's lease out of Sec. 201, Blk. 5, C.C.S.D.&R.G.N.G.R.R. Sur. ..... Tools moved in.
Humble O. & R. Co.'s No. 2-D University, 990 ft. from W and 330 ft. from S of NW Sec. 34, Blk. 30 ..... Drlg. 1,480 ft.
Republic Prod. Corp.'s No. 1 Hughes, 990 ft. from N and 1,650 ft. from W of their lease, Sec. 2, Julia Prather Sur. ..... Location.
Simms-Atlantic's No. 2-F University, Sec. 45, Blk. 30, 2,310 ft. from N, 330 ft. from E, University ..... Top salt 1,020 ft.; drlg. 1,890 ft.
The Texas Company's No. 3 University, 330 ft. N and E of SW of N half Sec. 46, Blk. 30, University Land .. Drlg. 890 ft.
The Texas Company's No. 2 University-Beasly, 330 ft. S and E of NW of S half Sec. 46, Blk. 30, University Land ..... Drlg. 1,500 ft.
Tidal Oil Co.'s No. 2 University-D, 330 ft. S and W of NE cor. NW of SW Sec. 34, Blk. 30, University Land .. Drlg. 1,625 ft.
T. P. Coal & Oil Co.'s No. 2 University, 2,310 ft. from S, 1,650 ft. from W, Sec. 34, Blk. 30, University Land .. Top pay 2,969 ft.; drlg. 3,020 ft.; swabbed 185 bbls. in 24 hrs.

CROCKETT COUNTY

California Co.'s No. 3 Powell, Lease No. 1, 1,056 ft. N and 495 ft. E of SW cor., Sec. 62, Blk. BB, G.C. &S.F. ..... Shut down 2,537 ft.
Empire Gas & Fuel Co.'s No. 1 Shannon, 330 ft. from N and E of Sec. 42, T.C.R.R. Sur. ..... Location.
Eppenaur et al's No. 2 Noelke, 500 ft. N and 1,250 ft. E of SE cor., Sec. 64, Blk. 1, I.&G.N.R.R. Sur. ..... Top salt 720 ft.; show oil 1,655 ft.; fishing 2,380 ft.
Lewis & Daniels' No. 1 Pecos River Bed, 19 yards S and 37 degrees E of NW cor., Sec. 33, Blk. 1, I.&G.N. Sur. .. Shut down 1,355 ft.
W. W. Donnelly & Young's No. 1 Middlebuster, C Sec. 11, Blk. 9, D.&S.E. Sur. ..... 7,000,000 ft. gas at 1,663 ft.; shut down 1,755 ft.
Moncrief's No. 3 Todd, 330 ft. from S and E, Sec. 29, Blk. VV ..... Drlg. 1,414 ft.; made 7 bailers oil at 1,231 ft.
T. P. Coal & Oil Co.'s No. 1 Shannon, 330 ft. from S and W of Sec. 44, T.C.R.R. Sur. ..... Rig.

CULBERSON COUNTY

Grisham & Hunter Oil Corp.'s No. 1 fee, 330 ft. from S and W of Sec. 14, Blk. 59, T.&P. ..... Drlg. 1,240 ft.. anhydrite.
Grisham & Hunter's No. 1 Seay, 330 ft. from S and W of Sec. 16, Blk. 59, Twp. 7, T.&P.R.R. Sur. ..... Building rig.
Grisham-Hunter's No. 3 Seay, 330 ft. from S line, 330 ft. from W line, Sec. 16, Blk. 59, Twp. 7 ..... Moving in machinery.
Hickey & Stiver's No. 1 C. O. Finley, 600 ft. N and 1,980 ft. W. Sec. 20, Blk. 82 ..... Small show oil 1,331 ft.; shut down 2,260 ft.; hole full water; elev. 3,874 ft.; shut down for 30 days.
West Coast Oil & Exploration Co.'s No. 1 McGregor, C NW, Sec. 14, Blk. 81 ..... Slight show oil 740 ft.; shut down 825 ft.; repairing engine.
Scott & Dittman's No. 1 Miller, 1,160 ft. N and 2,480 ft. E. Sec. 1, Blk. 97, Public School Land ..... Rainbow 1,056 ft.; 300 ft. sulphur water 1,725 ft.; oil show 2,528 ft.; hole full sulphur water; running 6-in. casing; shut down 3,508 ft.

ECTOR COUNTY

Anderson's No. 1 fee, 1,320 ft. E along N line, Sec. 19, and 150 ft. N at right angles with line, Sec. 18, Blk. B-16, Public School Land ..... Moving in material.
R. R. Penn et al's No. 1 Kloh-Rumsey, 330 ft. N and 2,640 ft. E of SW, Sec. 7, Blk. 44, Twp. 3s, T.&P. R.R. Sur. ..... Top salt 1,230 ft.; top pay 3,718 ft.; total depth 3,744 ft.; flowing 371 bbls. through 3-in. tubing on three-fourth inch choke with 300 lbs. well head pressure.
Penn-Humble's No. 1 York, 330 ft. N, 2,640 ft. W. Sec. 16, Blk. 44, Twp. 3s, T.&P.R.R. Sur. ..... Moving in material.

EL PASO COUNTY

Laytex's No. 1 Malone, 2,200 ft. SW and NW, Sec. 46, J. M. Day Sur. ..... Fishing 1,300 ft.

EDWARDS COUNTY

A. M. Griffith's No. 1 Wardlow, Sec. 60, V-8, J. C. Clift Sur. ..... Shut down 3,000 ft.

FISHER COUNTY

Cranfill & Reynolds' No. 1 Barrett, Sec. 191, Blk. 1, 330 ft. from S and W of NE, B.B.B.&C.Ry. ..... Drlg. 1,740 ft.
Cranfill & Reynolds' No. 1 Texas Cement, Sec. 19, 330 ft. from N and W of most westerly NW cor. ..... Hole full water 3,153 ft.
Landreth Prod. Corp.'s No. 2 Cooper, 330 ft. S and W of NE cor. Sec. 116, Blk. 1, H.&T.C.R.R. Sur. ..... Skidded rig 50 ft. south.
Magnolia Pet. Co.'s No. 1 Lee, Sec. 357, 2,310 ft. from N and 4,286 ft. from W ..... Fishing 3,395 ft.
Midwest Oil Co.'s No. 1 Steele, 660 ft. from S, 440 ft. from W, Sec. 210, Blk. 1 ..... Show oil 2,940-45 ft.; top pay 3,192 ft.; waiting on pipe line connections at 3,192 ft.
H. Riley's No. 1 J. H. Veatch, 250 ft. S and 990 ft. E of NW cor., Sec. 4, English Sur. ..... Shut down 3,300 ft.
Roeser-Pendleton and Amerada's No. 1 First Nat'l Bank of Waco, 660 ft. N and 600 ft. W of SE cor. NE of Sec. 204, B.B.B.&C. Sur. ..... Spudding.

GAINES COUNTY

Louisiana O. & R. Co.'s No. 1 Ralph, 1,320 ft. from S and W of Sec. 7, Blk. A-28, Public School Land .... Spudded 80 ft.

GARZA COUNTY

Bell Thompson's No. 1 Tuffing, 330 ft. from S, 2,310 ft. from E, Sec. 10, Blk. 6, H.&G.N. ..... Shut down 2,610 ft.

GLASSCOCK COUNTY

The California Co.'s No. 3 Currie, 990 ft. S and 2,310 ft. W of NE cor., Sec. 219, Blk. 29, W.&N.W.R.R. Sur. Coring at 2,148 ft.
California Co.'s No. 1 Jones, 330 ft. S from N and E lines, Sec. 25, Blk. 33, Twp. 2s, T.&P. Sur. ..... Rig.
Chal Daniel et al's No. 1 Meek, 2,310 ft. W and 1,600 ft. N of SE cor., Sec. 7, Blk. 34, Twp. 3s, T.&P. Sur.. Shut down 1,160 ft.
Fuhrman's No. 1 McDowell, 330 ft. from S and 1,650 ft. from E Sec. 24, Blk. 34, Twp. 2s, T.&P. ..... Top salt 1,065 ft.; drlg. 2,405 ft.
Glasscock et al's No. 1 Edwards, 330 ft. from S, 1,650 ft. from E, Sec. 18, Blk. 33, Twp. 2s, T.&P.R.R. Sur.. Drlg. 1,275 ft.
Kirby Pet. Co.'s No. 1 Baker, 330 ft. from N and W lines of Sec. 23, Blk. 33, Twp. 2s, T.P. Sur. ..... Top pay 2,090 ft.; increase in oil at 2,150 and 2,235 ft.; shut down 2,285 ft.; swabbed 400 bbls. in 11 hrs.; pumped 45 bbls. per hour.
Kirby Pet. Co. et al's No. 2 Baker, 990 ft. S and 330 ft. E of NW cor. Sec. 23, Blk. 33, Twp. 2s, T.&P.R.R. Sur. ..... Location.
Kirby Pet. Co.'s No. 2 Phillips, 330 ft. from N and W, Sec. 23, Blk. 33, Twp. 2s, T.&P.R.R. Sur. ..... Total depth 2,300 ft.; shot 206 qts. 2,160-65 ft.; pumped 671 bbls. in 24 hrs.
Landreth et al's No. 1 Huston, Sec. 29, Blk. 35, Twp. 2s, 330 ft. from S, 2,310 ft. from E, T.&P. Sur. ..... Drlg. 3,275 ft.
Lion O. & R. Co.'s No. 2 Coffee, 330 ft. from N and 990 ft. from E of Sec. 22, Blk. 33, Twp. 2s ..... Drlg. 1,445 ft.
Lion Oil & Ref. Co.'s No. 3 Coffee, 990 ft. S and 330 ft. W of NE cor. Sec. 22, Blk. 33, Twp. 2s, T.&P.R.R. Sur. ..... Location.
Schermerhorn Oil Co.'s No. 2 Phillips, 330 ft. from N and 990 ft. from E of Sec. 23, Blk. 33, Twp. 2s..... Top pay 2,120 ft.; coring 2,369 ft.; swabbing 190 bbls. 6 hrs. at 2,328 ft.
Shell Pet. Corp.'s No. 1 Coffee, 330 ft. from S and 1,650 ft. from E of Section 15, Blk. 33, Twp. 2s ..... Shut down 2,084 ft.
Shell Pet. Corp.'s No. 1-B Kloh-Rumsey, 330 ft. from N and W of Sec. 11, Blk. 33, Twp. 3s, T.&P. ..... Drlg. 1,625 ft.
Simms Oil Co.'s No. 1 Coffee, 330 ft. from N and 1,650 ft. from E of Sec. 22, Blk. 33, Twp. 2s, T.&P. ..... Drlg. 300 ft.
E. L. Smith Oil Co.'s No. 2 Coffee, 330 ft. from S and 990 ft. from E of Sec. 15, Blk. 33, Twp. 2s, T.&P.... Rig.
E. L. Smith's No. 1 Coffee, 330 ft. from S and E of Sec. 15, Blk. 33, Twp. 2s, T.&P. Sur. ..... Top pay 2,095 ft.; shut down 2,255 ft.; hole full oil; to test.
Sun Oil Co.'s No. 3 Phillips, 2,310 ft. from E and 330 ft. from S of Sec. 14, Blk. 33, Twp. 2s, T.&P. ..... Drlg. 1,630 ft.
Sun Oil Co.'s No. 4 Phillips, 330 ft. N and 990 ft. W of SE cor. Sec. 14, Blk. 33, Twp. 2s, T.&P.R.R. Sur. ..... Drlg. 475 ft.
Texas State Oil Co.'s No. 1 Coffey, 330 ft. from S and 990 ft. from E, Sec. 19, Blk. 34, Twp. 2s ..... Shut down 2,461 ft.
World Oil Co.'s No. 2-C McDowell, Sec. 21, Blk. 34, Twp. 2s, 330 ft. S and 2,310 ft. E of NW cor..... Shut down for orders.

HOWARD COUNTY

American Maracaibo Co.'s No. 3-A Settles, Sec. 6, Blk. 32, Twp. 2s, 777 ft. from N, 990 ft. from W, T.&P. R.R. Sur. ..... Shut down 2,030 ft.
Continental Oil Co.'s No. 6-C Chalk, 1,520 ft. from N and 2,440 ft. from E, Sec. 140, Blk. 29, W.&N.W. R.R. Sur. ..... Shut down 1,780 ft.
Continental Oil Co.'s No. 2 Kloh-Rumsey, 2,310 ft. S, 330 ft. W of NE cor. Sec. 13, Blk. 33, Twp. 2s, T.&P.R.R. Sur. ..... Shut down 2,106 ft.
Continental Oil Co.'s No. 4 Kloh-Rumsey, 2,310 ft. S and 1,650 ft. W of NE cor. Sec. 13, Blk. 33, Twp. 2s, T.&P.R.R. Sur. ..... Shut down 2,072 ft.
Continental Oil Co.'s No. 5 Kloh-Rumsey, 2,310 ft. S and 990 ft. W of NE cor. Sec. 13, Blk. 33, Twp. 2s, T.&P.R.R. Sur. ..... Drlg. 300 ft.
Continental Oil Co.'s No. 9-A Settles, 220 ft. from N, 660 ft. from E, Sec. 135, Blk. 29, W.&N.W.R.R. Sur. ..... Total depth 2,600 ft.; plugged back 2,543 ft.
Continental Oil Co.'s No. 3 Clay-F, 250 ft. S and 660 ft. W of NE cor., Sec 138, Blk. 129, W.&N.W.R.R. Sur... Shut down 2,675 ft. with show oil 2,595-2,675 ft.
Cosden Oil Co.'s No. 6 Roberts-A, 200 ft. N and E of SW cor., Sec. 129, Blk. 29, W.&N.W.R.R. Sur. ..... Shut down 1,456 ft.
Godley Oil Co.'s No. 2 Hooks, 1,980 ft. S and 200 ft. E of NW cor. Sec. 140, Blk. 29, W.&N.W.R.R. Sur. .... Shut down 1,740 ft.
Group No. 1 & Continental Oil Co.'s No. 7-A Settles, 1,650 ft. N and 2,310 ft. W of SE cor. Sec. 135, Blk. 29, W.&N.W.R.R. Sur. ..... Coring at 2,306 ft.; show oil 2,272 ft.
Group No. 1 & Continental Oil Co.'s No. 8-A Settles, 990 ft. N and 2,310 ft. W of SE cor. Sec. 135, Blk. 29, W.&N.W.R.R. Sur. ..... Drlg. 272.
Gulf Prod. Co.'s No. 8 Clay, 330 ft. S and 1,650 ft. W of NE cor. W half Sec. 155, Blk. 29, W.&N.W.R.R. Sur... Cleaning out 1,857 ft.; swabbed 107 bbls. in 9 hrs.
Magnolia Pet. Co.'s No. 13 Dora Roberts, 2,440 ft. N and 1,650 ft. E of SW cor. Sec. 136, Blk. 29, W.&N.W. Sur. ..... Shut down 2,927 ft.; set 8¼-in. casing.
Merriwether's No. 1 Smith, 150 ft. from S, 2,490 ft. from W, Sec. 45, Blk. 33 ..... Shut down 1,220 ft.
Moody Oil Corp.'s No. 29-B, Sec. 137, Blk. 29, 330 ft. from N and 1,650 ft. from W ..... Drlg. 1,345 ft.
Moody Oil Corp.'s No. 23-B Roberts, 990 ft. from N and W of Sec. 137, Blk. 29 ..... Shut down 261 ft.; set 10-in. casing 261 ft.

Merrick & Lamb's No. 9 Clay, 660 ft. from S and 360 ft. from E, Sec. 126, Blk. 29 — Show oil 1,745-60 ft.; total depth 3,230 ft.; preparing to pump; shot 300 qts. from 3,083-3,164 ft.; bridged back to 2,475 ft.; shot 100 qts. from 2,475-2,500 ft.; est. 45-bbl. well; building pumping derrick.

Moody Oil Corp.'s No. 20-E Roberts, 1,650 ft. S, 2,310 ft. W of NE Sec. 136, Blk. 29, W.&N.W.R.R. Sur. — Elevation 2,787 ft.; spudding.

Plymouth Oil Co.'s No. 4 Abrams, 330 ft. from N and 1,650 ft. from W, Sec. 5, Blk. 32, Twp. 2s — Top pay 2,480 ft.; shut down 2,519 ft.; plugged back 2,505 ft.; pumped 20 bbls., 15 per cent water, in 24 hrs.; may shoot.

Plymouth Oil Co.'s No. 5 Abrams, Sec. 5, Blk. 32, Twp. 2s, 1,650 ft. from N, 330 ft. from W, T.&P. — Top pay 2,205 ft.; total depth 2,-281 ft.; to test.

Plymouth Oil Co.'s No. 6 Abrams, Sec. 5, Blk. 32, Twp. 2s, 1,650 ft. from S, 330 ft. from W, T.&P. — Drlg. 1,700 ft.

Plymouth Oil Co.'s No. 7 Abrams, 2,310 ft. from N, 330 ft. from W, Sec. 5, Blk. 32, Twp. 2s, T.&P. Sur. — Drlg. 1,020 ft.

Pure Oil Co.'s No. 2 A. J. Hooks, 2,440 ft. N and 600 ft. E of SW cor. Sec. 140, Blk. 29, W.&N.W.R.R. Sur. — Location.

Pure Oil Co.'s No. 1-A Scrivner, 990 ft. from W and 330 ft. from S of Sec. 4, Blk. 32, Twp. 2s — Location.

Pure Oil Co.'s No. 2 Scrivner, 330 ft. from S and 1,650 ft. from W, Sec. 4, Blk. 32, Twp. 2s, T.P.R.R. Sur. — Location.

Schermerhorn Oil Co.'s No. 1 Abrams, 2,310 ft. from S and 1,650 ft. from W, Sec. 13, Blk. 33, Twp. 2s, T.&P.R.R. Sur. — Top pay 2,140 ft.; shut down 2,348 ft. to test.

Shell Pet. Corp.'s No. 2 Abrams, Sec. 13, Blk. 33, Twp. 2s, 2,310 ft. from S, 990 ft. from E, T.&P. — Shut down 2,100 ft.

Shell Pet. Corp.'s No. 2-A Roberts, 1,320 ft. from N, 1,650 ft. from W, Sec. 156, Blk. 29, W.&N.W.R.R. Sur. — Top pay 2,957 ft.; total depth 2,996 ft.; shot 50 qts. from 2,957-72 ft.

Ward Oil Co.'s No. 15 Roberts, 2,430 ft. from S and W, Sec. 137, Blk. 29 — Shut down 1,276 ft.

HUDSPETH COUNTY

California Co.'s No. 1 University, 3,821 ft. N and 2,554 ft. E of SW cor., Sec. 19, Blk. E — Drlg. 2,648 ft., white lime.

George Richardson's No. 1 Paxton, 2,640 ft. from N and W, Sec. 9, Blk. 16 — Shut down 205 ft.

Western States Oil Co.'s No. 1 Moore, C SE Sec. 16, Blk. 71, Twp. 6, T.&P. Sur. — Shut down 2,760 ft.

Western States Oil Co.'s No. 1 Gardner & Moseley, NE NW, Sec. 12, Blk. 18 — Fishing 3,140 ft.

IRION COUNTY

Banner's No. 2 Nutt, Subdivision 5, 150 ft. from N and E of W half Gonzales County School Lands — Location.

Brown & Fox's No. 2 Tankersley, 160 ft. from N and 500 ft. from E lines of S half of Sec. 712, F. Willig Sur. — Location.

Crawford Oil Co.'s No. 1 Williams, 450 ft. from N, 150 ft. from W, Subd. 8 — Shut down 1,105 ft.

Carl Cromwell's No. 1 Nutt, 150 ft. from N, 1,161 ft. from W. Subd. 6, Gonzales County School Land — Plugging back to 1,472 ft.; pumped 40 bbls. in 24 hrs.

Carl Cromwell's No. 1 Tankersley, 2,490 ft. from S and E, Sec. 1,219, T.C.R.R. Sur. — Rigging up.

Dennys & Andrews' No. 1 Tankersley, 2,660 ft. from W, 600 ft. from S of Sec. 4, H. N. Wallace Sur. — Drlg. 300 ft.

Kingwood Oil Co. et al's No. 1 J. D. Suggs, SE NW SE Sec. 19, Blk. 7, H.&T.C. Sur. — Show gas 7,656 ft.; set 4½-in. casing 7,550 ft.; drlg. 7,702 ft.

Simms Oil Co.'s No. 1 Carter, Sec. 87, Blk. 1, 330 ft. from N and E, H.&T.C.R.R. Sur. — Oil show 1,246 ft.; fishing 1,655 ft.

J. A. Starkweather's No. 1 Lindley, Sec. 1,160½ ,900 ft. from S, 150 ft. from E, H.&T.C. Sur. on E — Drlg. 1,005 ft.

P. H. Williams' No. 1 Ash, C of Sec. 20, Washington County — Fishing 4,700 ft.

JEFF DAVIS COUNTY

J. K. Hughes Dev. Co.'s No. 2 Means, 1,622 ft. N line, 600 ft. W line, Sec. 345, H.&T.C. Sur. — Show gas 3,271 ft.; fresh water 3,000-05 ft.; shut down 4,005 ft.; 600 ft. fresh water 4,000-26 ft.

JONES COUNTY

J. H. Adsit et al's No. 1 Swenson, C of NE of SE, Sec. 192, B.B.B.&C. Sur. — Running 6-in. casing at 2,100 ft.

Cosden-Herbert et al's No. 3 Bickley, 330 ft. N and W of SE cor. of S half NW, Sec. 50, Blk. 18 — Rig.

Cranfill-Reynold's No. 1 Stevens, 990 ft. from N and 3,630 ft. from W of John McMullen Survey 337 — Shut down.

Mid-Tex Oil & Gas Co.'s No. 1 King — Drlg. 1,395 ft.

Shabeen et al's No. 1 King — Shut down 1,650 ft.

KENT COUNTY

White & Smith's No. 1 Pursley estate, 1,320 ft. from E and 2,640 ft. from S of Sec. 8, Blk. H, H.&T.B. — Fishing 300 ft.

KIMBLE COUNTY

C. L. Bryant et al's No. 1 Lambert, 700 ft. from N and W line of F. Lotta Sur. — Shut down 800 ft.

McLean & Jamison's No. 1 Cannon, 1,940 ft. N and 300 ft. W of SE cor. Robert Cochran Sur. — Shut down 1,504 ft.

LOVING COUNTY

Humble Oil & Ref. Co.'s No. 1 Kloh, 2,640 ft. N and W Sec. 35, Blk. 55, Twp. 2. T.&P.R.R. Sur. — Fishing tools 1,670 ft.

Independent O. & G. Co.'s No. 1 Wheat, 330 ft. each way from W cor. of Sec. 85, Blk. 1, W.&N.W. — Building rig.

Lockhart Co.'s No. 3 Allen, 330 ft. from NE, 1,650 ft. from NW, Sec. 82, Blk. 33, H.&T.C. — Cem. 10 in. casing 675 ft.

Lockhart & Co.'s No. 3 Hubbard, 330 ft. from NE and SE, Sec. 83, Blk. 33, H.&T.C. — Top salt 775 ft.; drlg. 3,620 ft.

Lockhart & Co.'s No. 4 Hubbard, 1,660 ft. NE, 330 ft. NW, Sec. 33, Blk. 33, H.&T.C. — Cem. 10-in. casing 690 ft.; cem. 8-in. casing 2,637 ft.

LYNN COUNTY

Lubewell Oil Co.'s No. 1 May, 2,310 ft. S, 2,310 ft. W, Sec. 10, Blk. 7, E.L.R.R. — Shut down 190 ft. for casing.

George McCamey's No. 1 Edwards, 165 ft. N and E, Sec. 5, Blk. 2, L.S.&W. Sur. — Top salt 2,140 ft.; oil show 1,580-90 ft.; hole full sulphur water 4,730 ft.

MENARD COUNTY

I. C. Barnett's No. 2 Callan, Sec. 1, 1,050 ft. from S, 1,190 ft. W — Drlg. 603 ft.

MITCHELL COUNTY

Gibson & Johnson's No. 2 Scott, 150 ft. N and 2,490 ft. W of SE cor. Sec. 7, Blk. 19, Lavaca Navigation Co. — Spudded and shut down.

Seiger's No. 1 Scott, C of NE of SW, Sec. 36, Blk. 17, S.P.R.R. Sur. — Shut down 730 ft.

Teas & Wheeler's No. 1 Radford, 1,320 ft. N and W of Sec. 1, Blk. 27, T.&P. Sur. — Shut down 4,310 ft.

NOLAN COUNTY

Gibson & Johnson's No. 1 Bond, 1,320 ft. from N and 1,980 ft. from E of Sec. 42, Blk. 20, T.&P. — Underreaming 10-in. casing at 1,425 ft.

Phillips Pet. Co.'s No. 1 Plunkett, 330 ft. N and W of SE cor. NW, Sec. 66, Blk. 23, T.&P. Sur. — Underreaming 6⅝-in. casing; total depth 4,2[illegible] ft.

PECOS COUNTY

Anderson & Pritchard's No. 1 Wright, 330 ft. S and E of NW cor. Sec. 9, Blk. 131, T.&St.L.R.R. Sur. — Machine.

Anna Bell Oil Co.'s No. 1 Hollingsworth, 150 ft. N and W of C Sec. 24, Blk. 11, H.&G.N.R.R. Sur. — Machine.

California Co.'s No. 3 Smith, Lease No. 5, Sec. 16, Blk. 194, 337 ft. from S and 166 ft. from E, G.C. &S.F. Sur. — Drlg. 1,555 ft.

California Co.'s No. 4 Smith lease No. 1, 1,018 ft. from N and 330 ft. from E, Sec. 37, Blk. 194, G.C.&S.F. — Shut down 1,350 ft.

California Co.'s No. 5 Smith, Lease No. 1, 330 ft. from N, 2,405 ft. from W, Sec. 21, Blk. 194, G.C.&S.F. — Top pay 1,316 ft.; shut down 1,421 ft.; flowed 876 bbls. in 7 hrs.

California Co.'s No. 6 Smith, Lease No. 1, 1,700 ft. N and 330 ft. W of SE cor. Sec. 37, Blk. 194, G.C. &S.F.R.R. Sur. — Location.

California Co.'s No. 2 Tippett, 2,016 ft. from S and 1,040 ft. from E of Sec. 2, D.F. Robertson Sur. — Location.

California Co.'s No. 1 University-Landrum, Sec. 12, Blk. 18, 330 ft. from S, 1,065 ft. from E, University Land — Shut down 1,700 ft.; est. 6,000,000 ft. wet gas from 1,613-25 ft.; sprayed 20 bbls. oil per day; top pay 1,669 ft.; averaged 150 bbls. daily before being shut in.

Continental Oil Co.'s No. 2 University, 330 ft. S and 1,680 ft. E of NW cor. of Sec. 6, Blk. 17, University Land — Cellar.

Continental Oil Co.'s No. 3 University, 330 ft. S and 2,371 ft. E of NW cor. Sec. 6, Blk. 17, University Land — Location.

Continental Oil Co.'s No. 4 University, 330 ft. S and E of NW cor. of Sec. 6, Blk. 17, University — Drlg. 220 ft.

Continental Oil Co.'s No. 5 University, 330 ft. S and 1,020 ft. E of NW cor. Sec. 6, Blk. 17, University Land — Drlg. 735 ft.

Continental Oil Co.'s No. 6 University, 330 ft. S and 3,031 ft. E of NW cor. of Sec. 6, Blk. 17, University Land — Cellar.

Condor Oil Co.'s No. 1 Wangerin estate, 150 ft. S and W of NE cor. Sec. 52, Blk. 11, H.&G.N.R.R. Sur. — Top salt 780 ft.; drlg. 1,347 ft.

Corzelius Bros. et al's No. 1 Cordova, 2,490 ft. from N and 1,515 ft. from W Sec. 29, Blk. 11, H.&G.N.R.R. Sur. — Shut down 342 ft.

Cosby Drlg. Co.'s No. 1 Fort Stockton Land Co., 330 ft. from N and E of Sec. 34, Blk. 11, H.&G.N. — Top salt 1,140 ft.; drlg. 1,700 ft.

Cosden Oil Co.'s No. 1 McDonald, 350 ft. from N and E of Sec. 1, H.E.&W.T. — Drlg. 215 ft.

Cowboy Evans' No. 1 Pecos Valley, 2,310 ft. from NW line, 990 ft. from SW line of Sec. 36, Blk. 3, H.&T.C. R.R. Sur. — Top salt 1,215 ft.; shut down 1,604 ft.; top pay 1,556 ft.; flowed 10 bbls. after standing 4 hrs.

Cranfill & Reynolds' No. 1 White, 330 ft. from S and W Sec. 104, Blk. 11 — Drlg. below 1,005 ft.; gas show 933-40 ft.

Ditman Drlg. Co. et al's No. 1 Cunningham, 330 ft. from N and E of Sec. 34, Blk. 11, H.&G.N. — Location.

Dixie Oil Co.'s No. 1 McKinzie, 3,300 ft. from N and 2,025 ft. from W of Sec. 15, Blk. 604, G.C.&S.F. — Location.

Gulf Prod. Co.'s No. 21-A Smith, 1,544 ft. N and 330 ft. W of SE cor. Sec. 28, Blk. 194, G.C.&S.F.R.R. Sur. — Drlg. 1,592 ft.; 1,000 ft. oil in hole.

Gulf Prod. Co.'s No. 20-B Smith, Sec. 22, Blk. 194, 330 ft. from N, 2,322 ft. from E, G.C.&S.F. — Flowed 117 bbls. 12 hrs.; total depth 1,750 ft.; top pay 1,510 ft.

Gulf Prod. Co.'s No. 25 Yates, 1,015 ft. N and 8,083 ft. E of SW cor., R. C. School Land — Top lime 1,214 ft.; show oil and gas 1,218 ft.; total depth 1,322 ft.; flowed 497 bbls.; top pay 1,220 ft.

Henshaw et al's No. 1 University, 330 ft. from N and W of NE, Sec. 13, Blk. 18 — Top pay 1,004 ft.; total depth 1,030 ft.; pumping 45 bbls. day.

Henshaw et al's No. 2 University, 330 ft. from N and E lines of NW of NE of Sec. 13, Blk. 18 — Location.

Henshaw et al's No. 3 University, 330 ft. from S and E of NW of NE of Sec. 13, Blk. 18 — Location.

Henshaw et al's No. 4 University, 330 ft. from S and W of NW of NE of Sec. 13, Blk. 18 — Location.

Henshaw Oil Corp.'s No. 1 McDonald, 330 ft. from N and W of S 109 ac. of N 189 ac., Sec. 2, H.E.&W.T. — Top salt 690 ft.; shut down 1,412 ft.

Humble Oil & Ref. Co.'s No. 1 Cunningham, C of SW Sec. 34, Blk. 11, H.&G.N.R.R. Sur. — Location.

Independent & Rowan & Tong's No. 2 McDonald, 153 ft. from W line and 170 ft. from N line of S half NE Sec. 46, Blk. 12 — Show of oil, gas and sulphur water 1,360-64 ft.; drlg. 1,366 ft.

Jayhawk Oil Co.'s No. 1 Price, 1,310 ft. from W, 330 ft. from S, Sec. 6, Blk. 12, H.&G.N.R.R. Sur. — Top salt 610 ft.; shut down 1,154 ft.

J. L. Kennedy's No. 1 Roberts, C of Sec. 78, Blk. 3, T.&P.R.R. Sur. — Reaming to set 8-in. casing 1,295 ft.

Sam Kitts et al's No. 1 Sherbino, 330 ft. from N and 990 ft. from W line, Sec. 52, Blk. C-4, G.C.&S.F.R.R. — Top salt 976 ft.; drlg. 2,348 ft.

Landreth Prod. Corp.'s No. 1 Cunningham, 235 ft. S and 275 ft. W of NE of S half of Sec. 32, Blk. 11, H.&G.N.R.R. — Drlg. 150 ft.

Landreth Prod. Corp. et al's No. 1 Smithpeter, 330 ft. N and 280 ft. W of SE cor. Sec. 31, Blk. 11, H.&G.N.R.R. Sur. — Drlg. 850 ft.

Landreth's Prod. Co.'s No. 1 University, 330 ft. from N and W lines of E half of SE, Sec. 13, Blk. 18, University Land — Shut down 950 ft.; estimated 66,-000,000 ft. gas at 960 ft.; rig burned; shut in.

Landreth Prod. Co.'s No. 1-C University, 330 ft. from N and E, NW of SW of Sec. 31, Blk. 16 — Drlg. 610 ft.

Landreth Prod. Co.'s No. 2-C University, 330 ft. from N and W of NW of SW, Sec. 31, Blk. 16 — Show oil and gas 975 ft.; flowing 60 bbls. hourly.

Landreth Prod. Co.'s No. 1-D University, 990 ft. from S and 990 ft. from W of Sec. 31, Blk. 16 — Show gas 962 ft.; show oil 969 ft.

Landreth Prod. Co.'s No. 2-A McDonald, 330 ft. from N and E of Sec. 46, Blk. 12, H.&G.N. — Show gas 1,310 ft.; show sulphur water 1,320 ft.; drlg. 1,400 ft.

Landreth & Dunning's No. 1 McDonald, 330 ft. N and E of SW cor. Sec. 40½, Blk. 12, H.&G.N.R.R. Sur. — Drlg. 715 ft.

Landreth Prod. & Henshaw Bros.' No. 1-E University, 330 ft. N and W of SE cor. W half NE Sec. 13, Blk. 18, University Land — Spudding.

Landreth Prod. & Henshaw Bros.' No. 2-E University, 330 ft. S and E of NW cor. of W half of NE Sec. 13, Blk. 18, University Land — Cellar.

Landreth Prod. Corp. et al's No. 1-F University, 330 ft. from S and E of NE of SW Sec. 31, Blk. 16 — Location.

Landreth & Henshaw's No. 1 University-G, 330 ft. N and E of SW cor. Sec. 31, Blk. 16, University Land — Drlg. 945 ft.

Landreth & Henshaw's No. 2 University-G, 330 ft. N and W of SE cor. SE of SW Sec. 31, Blk. 16, University Land — Drlg. 925 ft.

Landreth & Henshaw's No. 3 University-G, 330 ft. S and W of NE cor. of SE SW Sec. 31, Blk. 16 — Drlg. 200 ft.

Landreth Prod. Corp. et al's No. 1-I University, 330 ft. from S and W of NE of NE Sec. 24, Blk. 18 — Location.

Landreth Prod. Co.'s No. 3-B University, 330 ft. from S and E of NE Sec. 13, Blk. 18 — 40,000,000 ft. gas 910-12 ft.; 10,-000,000 ft. gas 1,560 ft.; set 6⅝-in. casing at 1,570 ft.

Landreth Prod. & World Oil Co.'s No. 4-B University, 330 ft. S and W of NE SE NE Sec. 13, Blk. 18, University Land — Drlg. 1,150 ft.

Landreth Prod. & World Oil Co.'s No. 5-B University, 330 ft. N and W of SE NE Sec. 13, Blk. 18, University Land — Drlg. 1,145 ft.

Seminole Oil Co.'s No. 1 Pecos Valley, Sec. 22, Blk. 10, 360 ft. from SW, 2,280 ft. from SE. H.&G.N. Sur. .... Location.
Mauch & Kroger's No. 1 Holmes, Sec. 5, Blk. 178, T.C. Sur. .... Shut down 1,442 ft.
Mazda Oil Co.'s No. 1 Cordova Union Land Co., 2,310 ft. from N and 990 ft. from E of Sec. 103, Blk. 11, H.&G.N. .... Rigging up.
Milham Exploration Co.'s No. 1 McDonald, 153 ft. from S and 170 ft. from E of N half of NW, Sec. 46, Blk. 12, H.&G.N. .... Shut down repairs 1,445 ft.
Merrick-Bristow's No. 1 Neville, 330 ft. from S and W, Sec. 42, Blk. 12, H.&G.N.R.R. Sur. .... Top salt 645 ft.; drlg. 1,540 ft.
McMan Oil & Gas Co.'s No. 8-C Smith, 1,667 ft. S and 330 ft. W of NE cor., Sec. 25, Blk. 194, G.C.&S.F. R.R. Sur. .... Drlg. 1,130 ft.
R. E. Moore's No. 1 Arnold, 1,320 ft. from S and 660 ft. from E lines of Sec. 18, Blk. 1, H.&T.C.R.R. .... Drlg. 1,290 ft.; show oil 1,216 ft.
Moncrief's No. 1 Clarkson, Sec. 84, Blk. 11, H.&T.N.R.R. Sur., 2,310 ft. from N and W .... Top salt 860 ft.; drlg. 1,200 ft.
Moncrief et al's No. 1 Tippett, 330 ft. from S, 330 ft. E of C, Sec. 36, Blk. 12, H.&G.N. .... Top salt 875 ft.
Moncrief's No. 5 Tippett, 330 ft. N and 200 ft. W of SW cor., Sec. 101, located in Sec 107, C.T.&M.C.R.R. Sur.. Location.
Moncrief's No. 1 Sullivan, 150 ft. E of C of SW Sec. 58, Blk. 11, H.&G.N.R.R. Sur. .... Location.
George Morgan's No. 2 Toborg, Sec. 539, Blk. 1, 150 ft. S of Moncrief's No. 1 .... Shut down 1,280 ft.; show oil 1,208 ft.
Mid-Kansas Oil & Gas Co.'s No. 7 Smith, 330 ft. N and 227 ft. E of NW cor., Sec. 21, Blk. 194, G.C.&S.F.... Shut down 1,270 ft.
Mid-Kansas Oil & Gas Co.'s No. 32 Yates-A, 225 ft. N of most southerly N line and 1,308 ft. E of most western E line, Sec. 32, Blk. 194, I. G. Yates, Sur. A-8,195 .... Shut down 850 ft.
S. B. Owen's No. 1 Masterson, 330 ft. NE of SW line and 330 ft. NW of SE of Sec. 104, Blk. 10, H.&G.N... Shut down 975 ft.
J. D. O'Mara's No. 1 Bennett, Sec. 592, 1,460 ft. from S, 150 ft. from E, G.C.&S.F. .... Fishing 875 ft.
J. D. O'Mara's No. 1 Streety, C of Sec. 1, W. P. Howard Sur. .... Shut down 825 ft.
Phillips Pet. Co.'s No. 2 Pryor, 660 ft. from N and W line, Sec. 78, Blk. OW .... Top pay 1,325 ft.; total depth 1,408 ft.; pumped 85 bbls. daily.
Phillips Pet. Co.'s No. 3 Ramsey, 2,635 ft. from N and 1,070 ft. from E of Sec. 17, Blk. 194, G.C.&S.F..... Location.
Phillips Pet. Co.'s No. 4 Ramsey, 2,722 ft. from N and 1,980 ft. from E of Sec. 17, Blk. 194, G.C.&S.F. .... Shut down 932 ft.
B. J. Spikes' No. 1 George Brown, 2,490 ft. SE and SW line, Sec. 8, Blk. 3 .... Show oil 1,180-90 ft.; shut down 2,359 ft.
Rector Oil Co.'s No. 1 State Land, 330 ft. N and W of SE cor. Sec. 106, Blk. 8, H.&G.N.R.R. Sur. .... Drlg. 725 ft.
Red Bank Co.'s No. 1 Neville, 330 ft. from S and W Sec. 40, Blk. 12, H.&G.N. .... Drlg. 1,645 ft., lime and anhydrite.
M. M. Rowan's No. 1 University, NE Sec. 26, Blk. 16..... Shut down 2,044 ft.
Schumaker et al's No. 1 Williams et al, 330 ft. N of middle of S line, Sec. 1, Blk. 117, G.C.&S.F..... Drlg. 2,105 ft.
Shell Pet. Corp.'s No. 1 Owen et al, 220 ft. each way from E cor. Sec. 16, Blk. 5, H.&T.C..... Location.
Shell Pet. Corp.'s No. 1 Percival, 330 ft. from N and E of SE Sec. 199, Blk. 3, I.&G.N. .... Location.
Sides & Cloyd's No. 2 Blackstone & Slaughter, C NW of Sec. 34, Blk. A-2, T.&C.R.R. Sur. .... Spudded and shut down.
Shell Pet. Corp.'s No. 2-C University Land, 330 ft. S and E of SW of NW Sec. 31, Blk. 16, University Land.... Drlg. 1,542 ft.; show oil 1,352 ft.
Shell Pet. Corp.'s No. 3-C University, 330 ft. N and W of SE of SW of NW Sec. 31, Blk. 16, University Land .... 40,000,000 ft. gas 940-45 ft.; shut down 960 ft.
Shell Pet. Corp.'s No. 4-C University, 330 ft. N and E of SW of SW NW of Sec. 31, Blk. 16, University Land .... Top pay 925 ft.; drlg. 1,345 ft.; 400 ft. oil in hole.
Skelly Oil Co.'s No. 1 University, 330 ft. from S and W of N half SE Sec. 31, Blk. 16 .... Spudding.
Southern Crude O. P. Co.'s No. 1 Jackson T-139, Sec. 28, Blk. 3, 1,487 ft. from NE, 2,519 ft. from SE cor..... Location.
Sun Oil Co.'s No. 1 University-Toler, Sec. 25, Blk. 18, 330 ft. from N and 2,310 ft. from E .... Oil show 1,410 ft.; drlg. 1,678 ft.
Talbot et al's No. 1 Unsicker, 150 ft. each way from NE and SE cor. line of Sec. 25, Blk. 10, H.&G.N. Sur. .... Material on ground.
Taylor-Link's No. 5 University, 990 ft. from N and 330 ft. from W of Sec. 30, Blk. 16 .... Drlg. 975 ft.; 30,000,000 ft. gas at 905 ft.
Taylor-Link's No. 6 University, 330 ft. from N and 330 ft. from E of W half of SE, Sec. 13, Blk. 18 ..... Shut down 725 ft.
Taylor-Link Oil Co.'s No. 7 University Land, 330 ft. S and W of NE cor. of W half, Sec. 31, Blk. 16, University Land .... Shut down 885 ft.
Taylor-Link Oil Co.'s No. 8 University, 330 ft. N and 2,310 ft. W of SE cor. Sec. 31, Blk. 16, University Land .... Drlg. 750 ft.
Taylor-Link Oil Co.'s No. 9 University, 990 ft. N and 2,310 ft. W of SE Sec. 31, Blk. 16, University Land.. Drlg. 215 ft.
The Texas Co.'s No. 1 McDonald, NE cor. of SW, Sec. 46, Blk. 12 .... Top salt 680 ft.; dry and abandoned 1,635 ft.
The Texas Company's No. 2 McDonald, 330 ft. N and 775 ft. W SE cor. SW Sec. 46, Blk. 12, H.&G.N.R.R. Sur. .... Rigged up.
The Texas Company's No. 1 Graef, 2,329 ft. from N and 2,114 ft. from E of Sec. 44½, Blk. 12, H.&G.N.R.R. Sur. .... Location.
Texas-Phillips' No. 1 Campbell, 1,620 ft. from SW, 330 ft. from SE, Sec. 46, Blk. 10, H.&G.N. .... 1,000 ft. oil in hole; oil from 1,710-13 ft.; hole fills 250 ft. in 12 hrs.; 5,000 bbls. sulphur water 2,361 ft.; shut down 2,430 ft.
Tower & McKanna's No. 1 University, Sec. 14, Blk. 16, 2,310 ft. from N and E .... Fishing 2,049 ft.
Transcontinental Oil Co.'s No. 1 University, NE NW SW Sec. 18, Blk. 18 .... Top lime 1,155 ft.; drlg. 4,604 ft.
Trees Oil Co.'s No. 2 Trees, 330 ft. from N and W of SE cor. Sec. 43, Blk. 8, H.&G.N.R.R. Sur. .... Shut down 2,206 ft.
Trees Oil Co.'s No. 3 Trees, 330 ft. from S and W of Sec. 90, Blk. 8, H.&G.N. .... Cellar.
R. D. Webb's No. 2 fee, 1,665 ft. from N and 951 ft. from E line of Sec. 312, L. P. Scott Sur. .... Hole full sulphur water 1,600 ft.; shut down 1,610 ft.
World Oil Co.'s No. 1 University, 330 ft. from N and 2,310 ft. from E of Sec. 31, Blk. 16, University Land.. 4,000,000 ft. gas 1,630 ft.; pulling 5 3/16-in. casing 1,628 ft.
Zoch et al's No. 1 Cordova Union Land Co., C of SW Sec. 81, Blk. 11, H.&G.N..... Fishing 212 ft.

PRESIDIO COUNTY

L. C. Brite's No. 4 Brite, 271 ft. from N, 1,188 ft. from E, Sec. 245, Blk. 4 .... Shut down 670 ft.
Eastland Oil Co.'s No. 1 Tootle, C Sec. 17, Blk. 1, D.P. R.R. Sur. .... Spudded; shut down.
T. P. Coal & Oil Co.'s No. 1 Bogel, 330 ft. S and W, Sec. 83, Blk. 8, G.H.&S.A. .... Shut down 2,225 ft.

REAGAN COUNTY

Big Lake Oil Co.'s No. 1-C University, 2,598 ft. S and 250 ft. W of NE cor., Sec. 1, Blk. 2, University Land.. Top pay 2,903 ft.; 1,000 ft. fluid in hole; top pay 6,807 ft.; shut down 6,970 ft.
Big Lake Oil Co.'s No. 4-C University, 1,120 ft. from N and 1,096 ft. from E of Sec. 1, Blk. 2 .... Location.
Kemrow Co.'s No. 1 Sawyer Cattle Co., 1,320 ft. from N and 1,980 ft. from E line, Sec. 8, J. G. Robinson Sur. .... Location.
Texon Oil & Land Co.'s No. 2-B University, 4,655 ft. from S, 250 ft. from W Sec. 36, Blk. 9 .... Location.
Texon Oil & Land Co.'s No. 3-B University, 2,240 ft. from S, 920 ft. from W Sec. 36, Blk. 9 .... Location.
Thomas & Brann et al's No. 1 Hughes, C NE of Sec. 7, Blk. 1, T.C.R.R. Sur. .... Material.
Skelly Oil Co.'s No. 4 University-Grayson, Sec. 33, Blk. 8, 990 ft. W and 660 ft. N of No. 2 .... Shut down 3,074 ft.; top pay 3,051 ft.; swabbed 120 bbls. in 6 hrs.;

REEVES COUNTY

Mac Best et al's No. 1 McKinney, 400 ft. from N line, 1,030 ft. from E line, Sec. 26, Blk. C-18 .... Drlg. 100 ft.
Exploration Co.'s No. 1 A. A. Kinney, 1,500 ft. W. of NE cor. Sec. 26, Blk. C-18, Public School Land, elev. 2,847 ft. .... Shut down 2,990 ft.
H. T. Hansford's No. 1 Williams, 150 ft. from S and W, Sec. 17, Blk. 6, H.&G.N. .... Spudded and shut down.
Black & Fink's No. 1 Brooks, 1,980 ft. N and 660 ft. W, Sec. 16, Blk. 59 .... Shut down 500 ft.
Southern Crude O. P. Co.'s No. 1 Kioh-Rumsey, 2,310 ft. N and W SE cor., Sec. 23, Blk. 51 .... Drlg. 4,370 ft., lime and anhydrite.
David R. Thompson's No. 1 A. A. Eddins, Sec. 9, Blk. C-1 .... Drlg. by casing 5,490 ft.

RUNNELS COUNTY

Gibson & Johnson's No. 2 Serratt, 2,310 ft. from S and 1,650 ft. from E of Sec. 150, E.T.R.R. Sur. .... Location.
Gibson-Johnson's No. 1 Woods, Sec. 529, 2,600 ft. from S and 300 ft. from E, T. T. Williams Sur. .... Drlg. 1,495 ft.
Vacuum Oil Co.'s No. 4 McMillan, 555 ft. S and 717 ft. W of NE cor., Lot 22, Domingo Diaz Sur., No. 532.. Location.

SCHLEICHER COUNTY

Fort McKavet's No. 1 Tisdale, Sec. 1,499, River Section, 3,630 ft. from S, 150 ft. from W .... Set 6-in. casing 3,023 ft.; shut down 3,500 ft.
Interstate's No. 1 Whitten, 1,320 ft. from N and W, Sec. 35, Blk. LL, T.C.R.R. Sur. .... Hole slopped over with oil at 4,925 ft.; made one good flow; set 6-in. casing 5,050 ft.; shut down 5,470 ft.
George Wilson's No. 1 Page, Sec. 40, Blk. L, 1,290 ft. from N, 1,470 ft. from W, G.H.&S.A.R.R. .... Rigging up.
Underwood's No. 1 Tisdale, 2,095 ft. N and 1,186 ft. from E, Sec. 74, Blk. LL .... Shut down 920 ft.

SCURRY COUNTY

Byrd & Harmon's No. 1 Murphy, Jr., 330 ft. from N and E of Sec. 114, Blk. 97, H.&T.C. .... Drlg. 1,305 ft.
Camp Spring Oil & Ref. Co.'s No. 3 Guinn, 1,300 ft. from S, 300 ft. from E, Sec. 12, Blk. 3, H.&T.C.R.R. Sur .... Drlg. 2,380 ft.
Cottingham & Briscoe's No 1 Trees, C SE Sec. 147, Blk. 97 .... Drlg. 2,480 ft.
I. B. Mimms et al's No. 1 J. J. Koonsman' Sec. 216, Blk. 2, H.&T.C. Sur. .... Spudded and shut down 300 ft.
G. E. Dickman and R. B. Pender et al's No. 1 F. C. Davis, 1,000 ft. N and 1,770 ft. W. of SE cor. of Sec. 275, Blk. 2, H.&T.C. Sur. .... Drlg. 4,065 ft.
E. L. Smith Oil Co.'s No. 1 Moore, 1,320 ft. from S and W Sec. 379, Blk. 97 .... Moving in material.

STERLING COUNTY

Sherwood B. Owen's No. 1 Tweedle, 1,980 ft. from N and 1,320 ft. from E of Sec. 10, Blk. T, T.&P. .... Location.

SUTTON COUNTY

Independent Oil & Gas Co.'s No. 1 Willson, Sec. 30, Blk. A, 1,650 ft. from N, 2,310 ft. from W .... Spudded and shut down.
Independent & Sun Oil Co.'s No. 1 Allison, Sec. 39, Blk. A, 200 ft. from N and 1,000 ft. from W .... Drlg. 2,220 ft.
Phillips Pet. Co.'s No. 1 A. G. Holman, 2,310 ft. S and 330 ft. W NE cor., Sec. 25, G.C.S.D.&N.G.R.R. Sur.... Fishing 6,635 ft.; making 1,500,000 ft. gas 6,635 ft.
L. G. Priest's No. 1 Allison, 1,320 ft. N and E of SW cor., Sec. 52, Blk. A, T.&P. Sur. .... Show oil 3,625 ft.; increase at 3,690 ft.; shut down 3,968 ft.

TAYLOR COUNTY

Condor Pet. Co.'s No. 1 Allen, C of NW Sec. 220, Blk. 64, H.T.C.R.R. Sur. .... Location.
John B. Jameson's No. 1 Webb, 1,170 ft. S and W of NE cor. Sec. 46, Lunatic Asylum Land .... Show oil 4,917 ft.; shut down 4,960 ft.

TERRELL COUNTY

Big Bend Oil Co.'s No. 1 Bassett, C NW Sec. 155, Blk. D, M.K.&T.R.R. Sur. .... Shut down 1,150 ft.
Keck Pecos Trust Co.'s No. 1 Hamilton, C Sec. 6, Georgetown Ry. Sur. .... Shut down 2,835 ft.
Mrs. J. B. McPhee's No. 1 Sam Belt, C Sec. 78, Blk. D-7, E.L.R.R. Sur. .... Shut down 880 ft.
Milham Exploration Co.'s No. 1 Bassett, Sec. 76, Blk. Y, W. E. Robertson Sur. .... Cem. 6⅝-in. casing 3,986 ft.; shut down 5,490 ft.
Transcontinental Oil Co.'s No. 1 Goode, 2,152 ft. from E and 330 ft. from S Sec. 26, Blk. 161, G.C.&S.F.R.R.... Location.
Woodley & Jones' No. 1 Pankenham, C SE NW Sec. 43, Blk. B-2, C.C.S.D.&N.G.R.R. Sur. .... Shut down 625 ft.

TERRY COUNTY

Kingsland, O. P. Co.'s No. 1 Brownfield, C NW SW SW Sec. 7, Blk. 1-A, E.L.R.R. Sur. .... Fishing bailer 5,080 ft.

TOM GREEN COUNTY

Cannon et al's No. 1 Rust, 990 ft. S, 990 ft. W of NE cor. of Sec. 745 .... Rig.
Fitzgerald & Taliaferro's No. 1 Bennett, C SW Sec. 1,628, E. H. Ringer .... Shut down 2,430 ft.
Fuhrman Pet. Co.'s No. 1 Wardlaw, 2,650 ft. from N and E of Sec. 6, Blk. 17, H.&T.C. .... Location.

UPTON COUNTY

Dixie Oil Co.'s No. 32 Burleson, 330 ft. S and 1,650 ft. W of NE cor. John Nidever Sur. .... Drlg. 565 ft.
Gulf Prod. Co.'s No. 2 Hughes, 150 ft. N and 255 ft. E of SW cor., Lease "B," W. Teer Sur. No. 4, A-806.... Shot 50 qts. 2,231-68 ft.; made 90 bbls.; total depth 2,281 ft.
Pure Oil Co.'s No. 2 Hughes, Sec. 4, 150 ft. from N and W line of lease .... Top salt 590 ft.; show oil 2,275 ft.; total depth 2,292 ft.
Texas Pacific C. & O. Co.'s No. 14-A Lane, 990 ft. N and 2,310 ft. W SE cor. Sec. 5, G.C.&S.F. .... Location.
Texas Pacific Coal & Oil Co.'s No. 15-A Lane, 330 ft. N and 1,650 ft. W of SE cor. Sec. 5, G.C.&S.F.R.R. Sur... Shut down 460 ft.; running 10-in. casing.
T. P. Coal & Oil Co.'s No. 1 Sherek, 330 ft. from S and E of Sec. 1, Blk. 3, M-K-T .... Drlg. 2,155 ft.

VAL VERDE COUNTY

Independent Operators' No. 1 Whitehead, SE SE Sec. 30, Blk. 4, I.&G.N. Sur., elev. 1,175 ft. .... Shut down 4,850 ft.
O. O. Owens, No. 1 Mills, Sec. 128, Blk. 1, I.&G.N. Sur., elev. 2,130 ft. .... Gas sand 2,491-2,520 ft.; tested 125,700 ft. gas; reset 8-in. 2,511 ft.; total depth 4,210 ft.; cleaning out.
Phantom Oil Co.'s No. 1 Ingram, 175 ft. W of E line and 300 ft. N of S line Sec. 44, Blk. D-8, E.L.&R.R. Sur... Fishing 520 ft.
Valvert Oil Corp.'s No. 1 Bassett, C NE, Sec. 47, Blk. Y.. Set 15½-in. casing 767 ft.; set 10-in. casing 1,510 ft.; shut down 4,009 ft.

WARD COUNTY

Alpine Oil & Gas Co.'s No. 1 Boogher, 1,980 ft. SE and NE, Sec. 11, Blk. 5, H.&T.C. .... Top salt 760 ft.; total depth 2,151 ft.; top pay 2,120 ft.; swabbing and pumping 20 bbls. daily.

TULSA—
Best Location for oil Equipment Manufacturers

The amazingly rapid growth of the World's Oil Capital provides an interesting commentary on the importance of oil in modern life.

Oil men everywhere feel pride in the fact that their "capital city" is today the fastest growing city of her size in the world, having *more than trebled in size* in the past 10 years—that in advancing from 60,000 to 185,000 population she advanced from 100th city in the nation to 44th, forging ahead of such industrial centers as Youngstown, Grand Rapids, Bridgeport, Scranton, Des Moines—that she stands *12th* among American cities in number of buildings over 10 stories high—that she has an annual manufacturing output of $112,000,000—that she is the *wealthiest city per capita in the world.*

There are two fundamental reasons why Tulsa has become world headquarters for the manufacture of oil field and refinery equipment and why manufacturers in this field should continue to select Tulsa as the best available location:

1. The first reason is that Tulsa lies at the heart of the world's most prolific oil-producing area. Oklahoma leads the states in petroleum production, producing 18% of the entire world's supply. 90% of Oklahoma production, or 16% of the world's supply, occurs in that third of the state within a 90-mile radius of Tulsa. Tulsa has over 300 manufacturers of oil equipment, is the major distributing point for the oil well supply companies, and has long been "buying headquarters" of the midcontinent oil industry.

2. The second reason is that Tulsa has industrial facilities equalled by few, if any, cities in the world. She lies at the heart of one of the world's richest raw material and agricultural sections, is *the world's leading center of fuel production* (oil, gas and coal), has water which is unsurpassed both for drinking and for industrial purposes, and offers good transportation, plentiful labor and every other facility required by industry.

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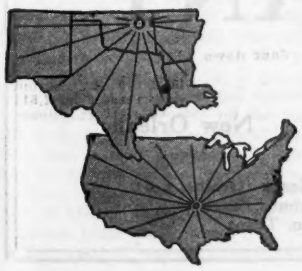

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Charleston, S. C.
Savannah, Ga.
New Orleans (Gretna, La.)
Port Arthur, Texas
Galveston, Texas

Atlantic et al's No. 1 Dorr, 1,730 ft. S, 990 ft. W, Sec. 2, J. Howe ..... Total depth 145 ft.; fishing 15-in. casing.

Atlantic Oil and Delmar Oil Co.'s No. 4 Hayzlett, 2,490 ft. SE NW and 1,470 ft. NE of SW line Sec. 17, Blk. 5, H.&T.C.R.R. Sur. ..... Drlg. 1,605 ft.

Atlantic Oil and Delmar Oil Co.'s No. 5 Hayzlett, 2,420 ft. SW of NE line, 2,050 ft. NW SE of Sec. 17, Blk. 5, H.&T.C.R.R. ..... Top salt 755 ft.; cem. 8-in. casing 775 ft.

Barstow Oil & Gas Co.'s No. 1 Monroe, Sec. 50, Blk. 33.. Spudded and shut down.

Cranfill & Reynolds' No. 1 Robeson, 220 ft. NW and NE Sec. 15, Blk. 5, H.&T.C. ..... Top brown lime 2,420 ft.; shot 30 qts. 2,420-35 ft.; shut down 2,495 ft.; pumped 15 bbls.

Continental Oil Co.'s No. 2 Sealey, 330 ft. S and W, Sec. 81, Blk. A, G.M.M.&A. Sur. ..... Top brown lime 2,280 ft.; oil pay 3,135 ft.; second oil pay 3,210-15 ft.; increase 3,230 ft.; total depth 3,358 ft.; plugged back 3,250 ft.; 1 bailer oil and 3 bailers water per hour.

Gulf Prod. Co.'s No. 2 Hutchins, 330 ft. N and E, Sec. 7, Blk. O ..... Top salt 1,240 ft.; top pay 2,529 ft.; total depth 3,012 ft., lime shells and sand; flowed 107 bbls. 24 hrs.

Gulf Prod. Co.'s No. 7 O'Brien, 330 ft. S and W Sec. 22, Blk. F, G.M.M.B.&A. Sur. ..... Drlg. 632 ft.

Gulf Prod. Co.'s No. 3 Wristen Bros., 220 ft. NE of SW and 220 ft. SE of NW Sec. 18, Blk. 5, H.&T.C. ..... Show gas 1,960-70 ft.; filling up with sulphur water 2,520-27 ft.; total depth 2,545 ft.; shut down for orders.

L. C. Harrison et al's No. 1 Wristen, 990 ft. from S and W lines of Sec. 26, Blk. B-28 ..... Top salt 700 ft.; drlg. 750 ft.

J. H. L. Oil Co.'s No. 3 Hayzlett, 220 ft. N and W Sec. 17, Blk. 5, H.&T.C. ..... Shut down 350 ft.

E. B. Lovelace et al's No. 1 Redman, 1,980 ft. NE of SW line and 1,980 ft. SE of NW line, Sec. 162, Blk. 34, H.&T.C.R.R. ..... Drlg. 1,120 ft.; hole full sulphur water 930-40 ft.

Penn & Atlantic's No. 1 Pecos Mercantile Co., Sec. 16, Blk. 34 ..... Salt water and oil 2,584-87 ft.; shot 40 qts. 2,345-98 ft.; total depth 2,618 ft.; swabbing and flowing 159 bbls. per day.

Penn & Atlantic's No. 2 Bennett, 2,310 ft. S line, 1,650 ft. W line, Sec. 16, Blk. 34, H.&T.C.R.R. Sur. ..... Location.

Shell Pet. Corp.'s No. 1 Owen et al, 220 ft. NW of SE line, 220 ft. SW of NE line, Sec. 16, Blk. 5, H.&T.C.. Top salt 775 ft.; show oil and gas 2,485 ft.; total depth 2,550 ft.

Shipley's No. 3 Hayzlett, 2,490 ft. S, 1,470 ft. W Sec. 17, Blk. 5 ..... Top salt 725 ft.; drlg. 2,325 ft.

Shipley et al's No. 4 Hayzlett, 2,050 ft. NW of SE and 2,420 ft. NE of SW line of Sec. 17, Blk. 5, H.&T.C. R.R. Sur. ..... Top salt 720 ft.; fishing 2,225 ft.

Shipley et al's No. 5 Hayzlett, assume common line Secs. 16 and 17 is N and S 220 ft. S and 1,910 ft. W Sec. 17, Blk. 5 ..... Rig.

Shipley et al's No. 1 Monroe, 330 ft. SE SW, Sec. 3, Blk. 1 ..... Shut down 566 ft. for 10-in. casing.

WINKLER COUNTY

V. T. Bolin's No. 2 Brown et al, 2,000 ft. S and W of NE, Sec. 4, Blk. B-5, Public School Land ..... Top salt 1,300 ft.; shut down 2,832 ft.

Bashara et al's No. 2 Bashara, 990 ft. S, 2,310 ft. E, Sec. 17, Blk. B-3, Public School Land ..... Location.

Cinderella Syndicate's No. 1 Hendricks, 330 ft. N, 1,650 ft. W Sec. 42, Blk. 26, Public School Land.... Total depth 150 ft.; building rig.

Cranfill & Pickrell's No. 2 Hutchins, 2,310 ft. S and W Sec. 47, Blk. 26 ..... Running 6-in. 2,722 ft., gray lime; show gas 2,280 ft.; increase 2,395 ft.; est. 5,000,000 ft. gas; drlg. 2,990 ft.; flowing 80 bbls. gas at 2,982-88 ft. daily.

Gulf Prod. Co.'s No. 2-B Lum Daugherty, 2,310 ft. from N and 1,320 ft. W Sec. 22, Blk. 26, P.S.L..... Top lime 2,495 ft.; show oil 2,680-85 ft.; pay 2,698-2,700 ft.; flow 50 bbls. hourly, 88 per cent water; fishing; total depth 3,005 ft.; cem. 6-in. casing 2,950 ft.

Humble O. & R. Co.'s No. 1-D Hendricks, 330 ft. from S, 2,310 ft. from W of Sec. 41, Blk. 26 ..... Top lime 2,770 ft.; total depth 2,772 ft.; cem. 6⅝-in. casing 2,765 ft.

Liner Drlg. Co.'s No. 1 Campbell, 330 ft. from N and E cor., Sec. 2, Blk. B-5 ..... Top brown lime 2,510 ft.; shut down 2,600 ft.

Skelly Oil Co.'s No. 5 Daugherty, 1,326 ft. W, 2,310 ft. S, Sec. 22, Blk. 26 ..... Location.

Southern Crude O. P. Co.'s No. 4 Hendricks T-90, 2,310 ft. S and E of Sec. 47, Blk. 26 ..... Top lime 2,242 ft.; drlg. 2,531 ft.; 18,000,000 ft. gas 2,401-04 ft.; mixing mud to kill gas; estimated 25,000,000 ft. gas; oil show 2,575-78 ft.; drlg. 2,690 ft.; gas show 2,665 ft.

ALUMINUM FOIL TO COMBAT CORROSION

(Continued from Page 41)

num foil is for coating the under side of the deck and the inside of the upper portion of the tank shell and where the deck itself is of steel the method of applying the foil is the same as on the outside, i.e., by first covering the surface with an adhesive mixture and then spreading the foil over it.

For the wooden members that support the roof it is suggested that they also be covered with this foil wherever it is possible to completely wrap the piece of wood in this material, for it is not practical to try to combine the operation of covering the under side of the deck and the deck supporting rafters at the same time for lateral movement in the deck due to expansion and contraction, wind pressure and loading of the deck would tend to break the foil at the places where it joined beam and deck.

The wooden superstructure under the roof can be fastened together with aluminum nails, and if any painting is necessary aluminum paint can be used, and in this way every part will be protected with aluminum in some form.

If an adhesive material is developed that is impervious to the crude oil or its products it will be possible to coat the balance of the shell of the tank on the inside with the foil, and it is possible that the bottom may be covered with this material also.

This method of protection is not limited to the large riveted storage tanks but can be applied equally well to the smaller bolted tanks, especially if the foil and aluminum paint are both used on the interior coating. The foil on the flat surfaces and the paint upon the inside channels and structural members used in fabricating the bolted tanks.

Covering Pipe Lines

Another application of foil to equipment in the oil industry is covering pipe lines and some test sections of pipe lines have already been treated in this manner and recently uncovered and examined and the results thus far were most encouraging.

In examining this pipe that had been buried it was found that the soil stresses due to the settling of the loose soil that was filled back into the ditch had not affected the aluminum foil coating. Under similar conditions it has been found that damage has been done to protective coatings applied direct to the pipe before it was buried.

It was also further noted that the chain used in lowering the pipe into the ditch had not marred the surface of the aluminum coating and this condition has been found to be quite common on covered pipe as well as on pipe that has been coated but not covered.

These two advantages are worthy of

Applying aluminum foil to pipe.

serious consideration by the pipe line engineers, who all realize how difficult it is to lay pipe in ditches without either soil stress of handling with chain or otherwise damaging the coating.

Used on Tank Cars

So far two standard type railroad tank cars have been coated with aluminum foil and not only are they beautiful in appearance, but it has been found that the interior temperature has been lowered in these cars just as it was in the storage tanks.

Aluminum foil seems to possess a quality of reflecting the sun's ray that is even greater than that attained by the use of fresh mixed aluminum paint and this ability to turn the sun's rays away from its surface actually gives a decidedly cooler feeling to a surface covered with the foil and exposed to the sun than that to be had by touching any other type of coating under like conditions.

The low cost and ease of application is making this aluminum foil suitable for many other purposes around buildings and other structures and one use is suggested in that it might be placed over water tanks for the lease water service and in this way keep the water cool even in the hot summer days experienced in West Texas and the South.

PANHANDLE FIELDS

(Continued from Page 66)

quarts at 1,272-1,305 feet and had an initial production of 15 bbls. Cranfill & Reynolds' No. 1 McDonald was dry and abandoned at 802 feet.

Callahan County

Condor Petroleum Co.'s No. 2 Windham was dry and abandoned at 1,603 feet.

Coleman County

Eastland Oil Co.'s No. 1 Newsom was dry and abandoned at 2,016 feet. Midwest Exploration Co.'s No. 6 Keeney was drilled to a total depth of 2,025 feet, topped the pay at 1,995-2,008 feet and had an initial production of 20 bbls. Permian Oil Co. and Gibson & Johnson's No. 2 Crowder was shot with 60 quarts at 2,020-28 feet and had an initial production of 15 bbls. Their No. 3 Crowder had an initial production of 548 bbls. at 2,010-32 feet. Levi Smith's No. 4 Morris was drilled to a total depth of 2,015 feet, topped the pay at 1,982-93 feet and had an initial production of 60 bbls. His No. 5 Morris was shot with 30 quarts at 2,010-36 feet and had an initial production of 650 bbls. Tower & McKanna's No. 6 Crowder was drilled to a total depth of 2,030 feet, topped the pay at 1,993-2,030 feet and had an initial production of 185 bbls. White Eagle Oil & Refining Co.'s No. 3 Morris was drilled to a total depth of 2,030 feet, topped the pay at 2,000 feet and had an initial production of 100 bbls. Its No. 9 Morris was drilled to a total depth of 2,027 feet, topped the pay at 2,017 feet and had an initial production of 250 bbls. Its No. 11 Morris was drilled to a total depth of 2,034 feet, topped the pay at 2,006-30 feet and had an initial production of 125 bbls. Its No. 15 Morris was drilled to a total depth of 2,023 feet, topped the pay at 2,012-23 feet and had an initial production of 150 bbls. Its No. 20 Morris was drilled to a total depth of 2,029 feet, topped the pay at 2,005 feet and had an initial production of 200 bbls. Continental Oil Co.'s No. 6 Overall was drilled to a total depth of 2,186 feet, topped the pay at 2,182 feet and had an initial production of 6 bbls. Elrod, Bebout & Sullivan's No. 5 Haas was drilled to a total depth of 1,507 feet, topped the pay at 1,491-1,507 feet and had an initial production of 50 bbls.

Eastland County

Davis and others' No. 1 Webb was dry and abandoned at 1,603 feet. Grose's No. 1 Dunham was drilled to a total depth of 926 feet, topped the pay at 919-26 feet and had an initial production of 10 bbls. Mook-Texas Oil Co.'s No. 1 Casey was dry and abandoned at 3,732 feet. States Oil Corp.'s No. 3 Coon was drilled to a total depth of 1,291 feet, had an oil show at 1,254-71 feet, was shot with 15 quarts from 1,254-69 feet and had an initial production of 10 bbls. Forster and others' No. 1-B Spencer was dry and abandoned at 1,490 feet.

Stephens County

Grantor Oil Co.'s No. 36 Swenson (formerly Swensondale Oil Corp.) was drilled to a total depth of 1,778 feet, was shot with 30 quarts from 1,707-28 feet and was shot again with 30 quarts at 1,351-74 feet and had an initial production of 20 bbls. The Texas Company's No. 46-A Parke was dry and abandoned at 3,201 feet.

Shackelford County

Caperton's No. 1 Todd was dry and abandoned at 550 feet. Combest Oil Co.'s No. 1 Tuton was dry and abandoned at 835 feet. Tom James' No. 1 Herron was dry and abandoned at 1,221 feet. Frizzell & Smalley's No. 1 Alexander was drilled to a total depth of 881 feet, topped the pay at 868 feet and had an initial production of 15 bbls. Moutray Oil Co.'s No. 1 Nail was dry and abandoned at 1,240 feet.

PANHANDLE COMPLETIONS
Week ending October 26
Carson County

Continental Oil Co.'s No. 1 Block, located 330 feet south and west NE SE, Section 111, Block 4, I.&G.N. R.R.Survey, was shot with 300 quarts from 3,025-3,105 feet and had an initial production of 450 bbls. Empire Gas & Fuel Co.'s No. 1 M. P. Co.'s fee, located Section 108, Block 4, I.&G.N.R.R. Survey, topped the pay at 3,103-36 feet, was drilled to a total depth of 3,305 feet, plugged back to 3,140 feet and had an initial production of 10 bbls.

Gray County

Panhandle Refining Co.'s No. 3 Saunders, located 330 feet north and east SW cor. E half NE, Section 3, Block 1, A.C.H.&B.R.R. Survey, topped the pay at 2,480-83 feet and had an initial production of 1,370 bbls. in 24 hours with 11,000,000 feet of gas. Danciger Oil & Refining Co.'s No. 1 Arnold topped the pay at 3,100-71 feet, was drilled to a total depth of 3,234 feet and had an initial production of 150 bbls. Danciger & Champlin's No. 2 Cook-Faulkner, located Section 3, Block B-2, H.&G.N.R.R. Survey, topped the pay at 2,857-65 feet, was drilled to a total depth of 2,960 feet

and had an initial production of 150 bbls.

Hutchinson County

Prairie Oil & Gas Co.'s No. 5 Diana Shaw was drilled to a total depth of 3,002 feet, topped the pay at 2,925-26 feet, was plugged back to 2,962 feet and had an initial production of 10 bbls.

Wheeler County

Upham Gas Co.'s No. 5 Gooch was drilled to a total depth of 1,590 feet, and had an initial production of 40,000,000 feet of gas from 1,440-1,590 feet.

WICHITA COMPLETIONS
Week ending October 26
Archer County

Abercrombie and others' No. 1 Harrison had an oil show at 1,103-16 feet and was dry and abandoned at 1,200 feet. Douglas Oil Co.'s No. 2 McClure had an initial production of 85 bbls. at 1,291-99 feet. Humble Oil & Refining Co.'s No. 9 Kunkel had an initial production at 1,117-22 feet. Moran Drilling Co. and Golding & Cochran's No. 1 Chandler had an initial production of 1,428½-32½ feet. L. O. Nix' No. 1 Matlock was dry and abandoned at 714 feet. Panhandle Refining Co.'s No. 1 Central Hanover Bank & Trust Co. was dry and abandoned at 1,560 feet. Prairie Oil & Gas Co.'s No. 1 Brom was dry and abandoned at 1,402 feet. E. J. Stump's No. 1 Ward was dry and abandoned at 1,101 feet.

Clay County

Lone Star Gas Co.'s No. 23 Stine and others had an initial production of 25 bbls. at 1,745-68 feet and at 1,768-75 feet.

Cooke County

Danciger Oil & Refining Co.'s No. 13 Huggins had an initial production of 152 bbls. at 1,106-33½ feet. Fain-McGaha's No. 1 Judy was dry and abandoned at 1,930 feet. Shell Petroleum Corp.'s No. 7 Field-Bowers had an initial production of 70 bbls. oil and 5 bbls. salt water at 1,164-94 feet.

Jack County

J. B. Bell Drilling Co.'s No. 1 Moore was dry and abandoned at 505 feet. Shabay Petroleum Co.'s No. 1 Loving was dry and abandoned at 3,452 feet.

Baylor County

Fain-McGaha's No. 1 Waggoner was dry and abandoned at 2,437 feet.

Throckmorton County

Magnolia Petroleum Co.'s No. 1 Gothright was dry and abandoned at 1,547 feet.

Young County

Allday & Beavers' No. 1 Johnson was dry and abandoned at 614 feet. Atlantic & Rogers' No. 1 Garvey was dry and abandoned at 853 feet. Bridwell Oil Co.'s No. 4 Cullers had an initial production of 5 bbls. at 545-60 feet. Bridwell Oil Co.'s No. 5 Cullers was dry and abandoned at 717 feet. Hawkins and others' No. 7 Owens had an initial production of 35 bbls. at 730-39 feet. Inman & Lisle's No. 1 Jones was dry and abandoned at 715 feet. Panhandle Refining Co.'s No. 1 Ward was dry and abandoned at 850 feet. Parks and others' No. 1 Carpenter was dry and abandoned at 620 feet. Williams' No. 1 Price was dry and abandoned at 596 feet. Wise & Porterfield's No. 2 Cullers had an initial production of 8 bbls. at 545-60 feet and was drilled to a total depth of 597 feet. Long and others' No. 1 Williams had an initial production of 135 bbls. at 2,385-94 feet.

Wichita County

John Dixon's No. 1 Chilson was dry and abandoned at 1,852 feet. Mid-Continent Holding Corp.'s No. 4 Wilkerson was dry and abandoned at 785 feet. Its No. 5 Wilkerson had an initial production of 65 bbls. at 687-706 feet. Spikes & Temple's No. 1 McCormick was dry and abandoned at 405 feet. Bateman & Dingee's No. 1 Woodward was dry and abandoned at 1,961 feet. British & American and others' No. 12 Kemp-Kempner was dry and abandoned at 1,828 feet. Comac and Prairie Oil & Gas Co.'s No. 1-C Bishop was dry and abandoned at 1,835 feet. J. E. Keller's No. 4 Waggoner Brothers was dry and abandoned at 1,763 feet. Hiland Oil Co.'s No. 3 Crudup had an initial production of 125 bbls. at 1,800-11 feet. McCarty Oil Co.'s No. 3 Kemp-Kempner had an initial production of 8 bbls. at 675-82 feet. Its No. 4 Kemp-Kempner had an initial production of 7 bbls. at 673-80 feet. Its No. 5 Kemp-Kempner had an initial production of 6 bbls. at 674-82 feet Omohundro and others' No. 1-E Chilson was dry and abandoned at 800 feet. Their No. 1-B Pace was dry and abandoned at 1,865 feet. Ryan Petroleum Corp.'s No. 110 Nance was dry and abandoned at 502 feet. Turner and Consolidated's No. 1 Barton was dry and abandoned at 1,819 feet.

Wilbarger County

Barkley & Meaders' No. 3 Waggoner had an initial production of 20 bbls. after having been shot with 10 and 20 quarts at 2,399-2,414 feet. Bradstreet Oil Co.'s No. 1 Waggoner had an initial production of 45 bbls. at 1,880-87½ feet. Consolidated Oil Co.'s No. 1 Dill was dry and abandoned at 1,930 feet. Davis Oil Corp.'s No. 2 Waggoner topped the pay at 2,643-84 feet and had an initial production of 405 bbls. Easter Oil Co.'s No. 4 Waggoner had an oil show at 1,926 feet, was drilled to a total depth of 1,931 feet and had an initial production of 80 bbls. Empire Gas & Fuel Co.'s No. 16 Waggoner had an initial production of 225 bbls. at 2,250-80 feet. Its No. 17 Waggoner had an initial production of 210 bbls. at 2,260-90 feet. Fain-McGaha Oil Corp.'s No. 1 Waggoner was dry and abandoned at 1,987 feet. Lewis Production Co.'s No. 8 Waggoner had an initial production of 85 bbls. at 1,942-44 feet and was drilled to a total depth of 1,948 feet. Simpson Fell Oil Co.'s No. 3 Waggoner encountered saturated lime at 2,646-72 feet, was drilled to a total depth of 2,700 feet and had an initial production of 32 bbls. Staley Wynne & Co.'s No. 4 Waggoner was shot with 10 quarts at 2,397-2,407 feet and had an initial production of 129 bbls. Their No. 5 Waggoner had an initial production of 87 bbls. at 1,869-84 feet and was drilled to a total depth of 1,890 feet.

SURVEY OF GASOLINE SERVICE STATIONS

(Continued from Page 41)

5. Is station situated on a:
   a. Principal street?.....
   b. Is station on street corner?...
      1. If so, is there an entrance from two streets?.....
   c. Side street?.....
   d. Main highway?.....
   e. Rural road?.....
6. Approximately how far is the nearest filling station?.....

2. Type of Station

1. What type is the station?.....
   a. Drive in?.....
   (That is, a station set back from the road primarily devoted to the sale of gasoline and oil.)
   b. Roadside fill?.....
   (Stations combined with unrelated businesses such as lunchrooms, hardware stores, etc. Located in country.)
   c. Curbside fill?.....
   (Same as "b" but located in cities.)
   d. Garage?.....
   (Stations combined with garages primarily designed for the storage, sale and repair of cars.)
   e. Bulk filling station? .....
   (Stations operated on the property of oil company. Bulk stations where gasoline is unloaded from tank cars.)
   f. "Super" station?.....
   (Stations combined with related businesses other than garages such as sale and servicing of lubricating oil and greases and accessories such as tires and batteries.)
2. Is the station equipped for complete crankcase and lubricating service?.....
   (That is, changing motor oil and lubricating motor and chassis.)
3. How many oiling pits has the station?.....
4. How many car elevating hoists for chassis lubrication has the station?.....
5. Is the station equipped to furnish air?.....
6. Is the station equipped with toilet facilities for use of the motorist?.....
7. Is the drive covered so that cars are under a roof while being serviced?.....
8. Is the station one of a chain?.....
   a. How many other stations are there in the same chain in the state?.....
9. Is station owned and operated by an oil company?.....
   (That is, a company producing, refining or operating a bulk storage plant and selling their products by tank wagon delivery.)
10. Is station owned by an oil company but operated by a private individual?.....
11. Is station owned and operated as such by private individuals?..
12. What are the dimensions of the station property?.....

3. Gasoline Sales

1. How many gasoline pumps are there in the station?.....
2. How many brands of gasoline are sold?:
   a. 1 Brand.....
   b. 2 Brands.....
   c. 3 Brands.....
   d. 4 Brands.....
   e. 5 or more Brands.....
3. How much regular gasoline did you sell during 1929?.....gallons
4. How much high-test or special gasoline (exclusive of Ethyl Gasoline)?..... gallons
5. How much Ethyl Gasoline?.....
   ..... gallons
6. What do you estimate the average size of sale of gasoline?.....
   ..... gallons

4. Lubricating Oils and Greases

1. How many brands of oil do you carry?.....
2. How many brands of grease?.....
3. How much lub oil did you sell during 1929?.....gallons
4. How many pounds of grease did you sell during 1929?....pounds

5. Marketing Policies

1. How many hours a day is the station open for business?.....
   .....
2. Do you grant discounts to regular patrons?.....
3. What advertising medium is employed?:
   a. Road signs?.....
   b. Local papers?.....
   c. Direct mail?.....
   d. What other form?.....
4. How many men are employed?....
   a. How many shifts?.....
5. Do you operate any other business in connection with the sale of gasoline?:
   a. Tire repair shop?.....
   b. Battery service?.....
   c. Automobile accessory sales?..
   d. Tire sales? .....
   e. Lunch room?.....
   f. Food sales?.....
   g. If any other please state what.....
6. What free service do you give?:
   a. Lubricating?.....
   b. Air and water?.....
   c. Tire changing? .....
   d. If any other, please state....
   .....
7. Please mark (1, 2, 3, etc.) what you consider to be the order of importance in obtaining trade:
   a. Location of station.....
   b. Appearance of station.....
   (Whether of attractive design, well painted, good looking grounds, etc.)
   c. Free service.....
   (Such as wiping wind shields, filling tires, etc.)
   d. Advertising.....
   e. Discounts to regular patrons..
   .....
   f. Salesmanship.....
   (Courtesy of attendants and the attention they give the motorist.)
   g. Brand of gasoline and oil sold.....
   h. Up-to-date equipment.....
8. Do you believe that the trend is away from roadside or curbside fills and poor looking outlets and toward fewer and better drive-in service stations?.....

6. Miscellaneous

1. How was the station financed?:
   a. Private capital?.....
   b. Sale of stock?.....
   c. Rental from gasoline distributors?.....
   d. Equipment lease?.....
2. What is the capital investment in?:
   a. Land?, $.....
   b. Buildings?, $.....
   c. Equipment?, $.....
3. What is the yearly operating expense for?:
   a. Salaries?, $.....
   b. Wages?, $.....
   c. Maintenance?, $.....
   d. Repairs?, $.....
   e. If not itemized, what is total?, $.....
4. Do you carry fire insurance?.....
5. What rate of depreciation is charged against gross profits? ..... %
6. What were the net profits of the station for 1929?, $.....
7. What percentage of your profit is made from sale of?:
   a. Gasoline?.....%
   b. Lubricating oil and greases? .....%
   c. Tire, battery or repair services?.....%
   d. Other goods such as automobile accessories, food, etc.?...
   .....%

THE ECONOMIC STORAGE OF CRUDE PRODUCTION

(Continued from Page 40)

put of gasoline was 44.40 per cent of the crude run.

The enormous growth in the consumption of petroleum products has in the past supported the view that in time demand would overtake supply and that the stocks in storage would then be justified and would serve their true function as a reservoir. The other view is that the future is no longer uncertain and that the industry can now with safety reduce the quantities in storage as opportunity offers and, more important, that it can attain a financial equilibrium by utilizing these stocks regardless of cost in time of shortage instead of stimulating greater production of crude by advances in the price schedule.

New Jersey's Reduction

Whether this latter policy has been right or wrong, the Standard Oil Co. of New Jersey has been sufficiently convinced of its soundness to reduce its own stocks from 90,000,000 bbls. at the end of 1926 to 70,000,000 bbls. at the middle of this year. This reduction of 22 per cent in three and a half years was not accomplished without substantial losses but these were not sufficient to outweigh the resultant advantages. These gains are not reflected in the overproduction situation to the extent that would have been the case if in that period the aggregate stocks in storage in the United States had not increased 27 per cent.

Since the factors of higher efficiency in refining and the growth in the manufacture of absorption gasoline referred to have come into play, the aspect of the overproduction problem has entirely changed. Its success in handling the enormously increased demands for gasoline in the past 10 years warrants the belief that the industry will solve its own production problem without endangering the supply for the future. The solution would seem to be to withdraw reserves of crude oil from their natural reservoirs only as they are required.

SHELL P. L. STATEMENT

The Shell Pipe Line Corp.'s September statement shows pipe line runs of 3,753,566.22 bbls.; shipments 3,875,942.08 bbls. Daily average runs 125,119 bbls.; daily average shipments 129,198 bbls. The company runs oil from wells in West Texas, Oklahoma and Kansas.

WILDCAT OPERATIONS IN SOUTHWEST TEXAS

(Continued from Page 60)

Newmann & Speer, Inc.'s No. 1 McConnell, 500 ft. southwest of Texas Co.'s No. 1 Cude ..... Drlg. 1,000 ft.
Cranfill & Reynolds' No. 1 Berensdorf, A. Floyd Sur. .. Location.
W. H. Harper's No. 3 Thomas, J. Roberts Sur. ..... Set casing to test 1,724 ft.
G. R. McIntire's No. 1 J. B. Towns in Isaac Weldon Sur., 4,900 ft. to NE line, 1,350 ft. to SE line of survey ..... Drlg. 2,390 ft.

DE WITT COUNTY

Gibson & McIntyre's No. 1 Wm. Van Roeder ..... Shut down 1,580 ft.
H. T. Ree's No. 1 Lunhardt ..... Drlg. 600 ft.

DUVAL COUNTY

Simms Oil Co.'s No. 5 Dinn, Sec. 62, 500 ft. W line, 660 ft. S. line ..... Location.
National Oil Co.'s No. 2 Ball, Agua Poquita Sur., Blk. 3. .Rigging up.
Southern Oil Co.'s No. 1 Welder Ward, Sur. 215 ..... Drlg. 500 ft.

EDWARDS COUNTY

A. M. Griffith's No. 1 Wardlaw ..... Shut down 3,000 ft.

FAYETTE COUNTY

Muldoon Oil & Gas Co.'s No. 1 Kemp, M. Smith League .. Drlg. 400 ft.
W. J. Kelly's No. 1 Burke ..... Shut down 1,000 ft.

GOLIAD COUNTY

Compton Oil Co.'s No. 1 Fromme, Dexter Survey..... Rigging up.
Humble Oil & Refg. Co.'s No. 1-A Spangle ..... Drlg. 1,037 ft.
F. P. Zoch's No. 1 Kaufman ..... Ready to test gas show 2,938 ft.
Mission Drlg. Co.'s No. 3 Ray, 3 miles E of No. 2. Drlg. 5,660 ft.
Western Union Oil Co.'s No. 1 Lucas, Juan Moya Delgado Sur. ..... Standing 480 ft.

GONZALES COUNTY

Acme Royalty & Leasing Co.'s No. 1 Weber, Thomas Wright Survey ..... Drlg. 925 ft.
Adams & Lyles' No. 1 Jackson Sur. ..... Shut down 800 ft.
Joe Bruner's No. 1 R. D. and J. C. Miller ..... Resumed drilling at 3,000 ft.
Crown Petroleum Co.'s No. 1 Hattenback ..... Drlg. 2,950 in shale.
Empire Gas & Fuel Co. No. 1 Norwood in Winslow Turner Sur. No. 3 ..... Produced at 3,779 ft.; being deepened.
Finnell & Elam's No. 1 Robinson, Liverpool Sur. ..... Drlg. 1,720 ft.
Hoffman et al's No. 1 Booker, J. Stewart Sur. ..... Drlg. 1,025 ft.
Marshall & Moore's No. 1 St. Clair, R. H. Wymn Sur. .... Drlg. 1,700 ft.; steel derrick up.
L. L. Jones' No. 1 J. F. Kindred, W. W. Barnes Sur., 700 ft. W line, 1,000 ft. S line ..... Location.
Linderman Bros.'s No. 1 F. H. Frampton ..... Drlg. 1,610 ft.
A. G. Kifer's No. 1 B. B. Dix ..... Shut down 2,690 ft.

GUADALUPE COUNTY

H. H. Weinert's No. 1 A. E. Dowdy, J. C. Darst Sur., 110 ft. S line, 36 ft. E line ..... Location.
H. H. Weinert's No. 2 A. E. Dowdy, J. C. Darst Sur., 100 ft. N line, 36 ft. E line..... Location.
J. O. Dore's No. 1 Appling, H. Cottlebur ..... Location.
Grayburg Oil Co.'s No. 1 Wells, Jose La Bume Sur. ..... Drlg. 2,710 ft. in hard shale.
Pagenkopf & Kennon's No. 1 Holm, James Kent Sur., 7 miles E of Seguin..... Drlg. 800 ft.
Sights' No. 1 Berring Green, DeWitt Sur. ..... Tested sulphur water 2,356 ft.
L. W. Stieren's No. 1 S. H. Herman, Ragsdale Sur. ..... Tested sulphur water 2,350 ft.
Sinclair Oil & Gas Co.'s No. 1 Koepp, W. H. Smith Sur. No. 62 ..... Drlg. 1,763 ft. in Buda lime.
Adams-Lyles-Walton's No. 1 Zoluroski, Jesus Cantu Sur... Corrected depth 953 ft.; standing.

HAYS COUNTY

E. A. Bucklin's No. 1 ..... Set casing 540 ft.

JACKSON COUNTY

Wright Bros.' No. 6 Drushell ..... Waiting orders 2,650 ft.
Wright Bros.' No. 7 Drushell ..... 3,875 ft.; waiting on casing.

JIM HOGG COUNTY

T. J. Conway's No. 2 Palacious, Sur. 232, Blk. 10 ..... Rigging up.
Deep Rock Oil Co.'s No. 1 Kelsey ..... Drlg. 2,000 ft.
L. M. Holden's No. 4 Jones, 1,820 ft. to north line, 1,320 ft. to east line of 160 acres out of Share 5 "A" Dregue Hinojosa Grant ..... Set 10-in. casing 42 ft.
R. E. Moore's No. 1 Yaguirre, 150 ft. N & E lines Las Animas Grant ..... Drlg. 1,350 ft.

JIM WELLS COUNTY

E. W. Ogden's No. 1 G. Farris, M. Perez Sur. ..... Drlg. 2,404 ft. Making drill stem test of 4 feet of sand.
Magnolia Pet. Co.'s No. 1 C. Cook, W. H. Sartain Sur., Blk. 45 ..... Dry and abandoned at 4,780 ft.

KARNES COUNTY

Ruby & Claypool's No. 1 Tom, V. Zepeda Sur., 850 ft. N line, 1,600 ft. E line ..... Set surface casing.
Benedum-Trees' No. 1 S. E. Crews, Britton Odem Sur. .... Shut down 2,670 ft.
Hurador Oil Co.'s No. 1 W. E. Porter ..... Total depth 2,710 ft. cored sand at 2,650 ft.
The Texas Company's No. 1 Rhuman ..... Drlg. 800 ft.

KLEBERG COUNTY

Humble Oil & Refining Co.'s No. 8 R. J. Kleberg, Sec. 40, Lot 7, of K.T.&L. Sur., 150 ft. to S and E. lines ..... Location.

KERR COUNTY

L. R. Page and associates' No. 1 Real ..... Shut down 3,671 ft.

KENDALL COUNTY

Borgett et al's No. 1 Haag, W. Avery Sur. ..... Drlg. 600 ft.

KIMBLE COUNTY

Carl L. Bryant's No. 1 C. E. Lambert .... Drlg. 150 ft.
H. A. McLean & Jamison's No. 1 R. F. Cannon ..... Shut down 995 ft.

KINNEY COUNTY

Lloyd Oil Co.'s No. 1 G. B. Moore, Survey 117 ..... Drlg. 2,200 ft.
A. Blume's No. 1 School land, Sec. 15 ..... Spudded in.

LIVE OAK COUNTY

O'Neil & Catlett No. 1 Smith, 900 ft. SW line, 150 ft. NW line ..... Rigging up.
J. P. Lightfoot's No. 1 Lewis ..... Drlg. 2,460 ft.
Simmons Oil Co. No. 1 Richard Coquat in Jas. C. Hill survey 2,250 ft. to S. line 1,750 ft. to E. line. 7 miles NE of Oakville ..... Bldg. derrick.

MAVERICK COUNTY

Ryan Consolidated Petroleum Co.'s No. 2 Indio Ranch .. Total depth 5,661 ft. Shot at 3,300 ft. with no results.
Rycade Oil Corp.'s No. 4 J. M. Chittim ..... Fishing for tools 5,560 ft.
Rycade Oil Corp.'s No. 4 Sullivan ..... Drlg. 5,770 ft.; 2,000,000 ft gas.
Rycade Oil Corp.'s No. 5 Chittim ..... Drlg. 1,500 ft. Making 2 bbls. heavy black oil per day.
The Texas Company, 5 miles west Darling Switch ..... Drlg. 3,440 ft.

MEDINA COUNTY

Pan American Petroleum Co.'s No. 1 Harrison, Sur. 799 .. Rigging up.
Pat Armstrong's No. 1 C. W. Butts in George C. Hanson Sur. ..... Drlg. 100 ft. in rock
Peters et al's No. 1 Noonan, J. N. Aisbury Sur. ..... Shut down 1,250 ft.
Cecil Switzer's No. 1 Zen, 6 miles west of Hondo..... Fishing 3,487 ft.
R. C. Hill's No. 1 A. Wuezbach, G. Areola Sur., 500 ft. E line, 600 ft. S line ..... Location.
California-Medina's No. 1 Rothe ..... Fishing 3,450 ft.
A. U. Skogland's No. 1 Soothof, A. Smelzer No. 19 Sur. .. Shut down 900 ft.

MILAM COUNTY

Service Oil & Gas Co.'s No. 1 Muldrow, L. Taylor Sur., SE cor. ..... Location.
E. L. Chapman's No. 2 Johnson, J. J. Acosta Sur. ..... 2,100 ft. hot sulphur water in Edwards.
I. P. Sessions' No. 7 J. Bauer, T. J. Chambers Sur. .... Location.
E. L. Chapman's No. 1 Johnson. J. J. Acosta Sur. ..... Drlg. in Edwards lime.
E. L. Chapman's No. 1 Holman in J. J. Liendo Survey.... Drlg. 1,740 ft.
Noack-McCarmack's No. 1 D. D. Fowler ..... Moving in rotary rig. Standing at 1,240 ft.
Diggs and others' No. 1 Nolen ..... Derrick.
Hill & Bonwell's No. 1 B. Booher, James Welch Sur. .. Drlg. 2,020 ft.
Lloyd Oil Corp.'s No. 1 Camp, Acosta Sur. ..... Showed sulphur water in Edwards at about 2,100 ft.
Lloyd Oil Corp.'s No. 1 San Clement, Fakes Sur. ..... Spudded in.
A. H. Wray's No. 1 D. D. Fowler .... Drlg. 964 ft.

McMULLEN COUNTY

Sun Oil Co.'s No. 1 Berry, J. Poitenent Sur. No. 9 ..... Location.
Cowboys Oil Co.'s No. 1 Shiner, H. M. Brewer Sur. ..... Testing gas sand, 2,269 ft.

NUECES COUNTY

Nueces River Basin Dev. Co.'s No. 1 F. C. Allen ..... Drlg. 3,760.
Trinity Drillers and Sun Co.'s No. 1 Tompkins ..... Drlg. 3,205

SAN PATRICIO COUNTY

Magnolia Petroleum Co.'s No. 1 C. Freeman, Sec. 57 .... Abandoned dry at 5,525 ft.
LaFeria Oil & Gas Co.'s No. 1 C. C. Smith in J. C. White Survey, 690 ft. to north line, 350 ft. to east line .... Set surface casing. 519 ft.
Houston Gulf Gas Co.'s No. 3 Welder ..... Abandoned below 5,000 ft.

STARR COUNTY

The Texas Company's No. 4-A V. G. Guerra, Porcion 67, Share 305-D ..... Drlg. 500 ft.
Smith & Adams' No. 1 Welch, Pedernal Sur. ..... Drlg. 531 ft.
Ohio Oil Co.'s No. 1 Bass, Porcion 76, Blk. 71 ..... Drilling.
Milam Drlg. Co.'s No. 5 R. Allen, Blk. 147 ..... Location.
U. S. Oil & Gas Co.'s No. 1 Kelsey, Por. 76, Blk. 11 ..... Standing.

UVALDE COUNTY

Waldrop & Welch's No. 1 H. S. Benson, 2 miles northwest of Uvalde ..... Spudded in.

WEBB COUNTY

L. U. Nelson's No. 2 Moglio, SE NW Sur. 6,3 ..... Drlg. 1,300 ft.
Usher Carson's No. 2 D. Benavides, Sur. 1,613 ..... Abandoned 2,535 ft.

WILLIAMSON COUNTY

M. L. Vaughan's No. 1 Logan D. Wright Sur., 300 ft. E line, 500 ft. S line ..... Location.
Ray Oil Co.'s No. 1 W. J. Fouse, W. Donoho Sur. ..... 156 ft.; waiting on heavier rig.
W. J. Harlan's No. 1 J. V. Stile, J. Bevil Sur., 600 ft. N line, 900 ft. E line ..... Location.
F. M. Moss et al's No. 1 Kreuger, W. Cartwright Sur., SW cor. ..... Location.

WILSON COUNTY

R. M. Sherer's No. 1 Tummilson, A. Trevena Sur. ..... Drlg. 457 ft.
Grayburg Oil Co.'s No. 1 Tigler, Parrot Sur. ..... Drlg. 3,304 ft. in lime rock.
R. M. Sherer's No. 1 First State Bank of Stockdale, Moran Sur. ..... Drlg. 220 ft.

ZAPATA COUNTY

R. F. Blankenship's No. 1 G. T. Montemeyer, Sur. 45, Blk. 7, 150 ft. N & E lines ..... Location.
John Pappas' No. 2 Cuellar, Por. 33 and 34 ..... Drlg. 150 ft.
Hill et al's No. 1 A. O. de Vela, Blk. 30, El Grulle Sur. ..... Drlg. 925 ft.
National Oil Co.'s No. 1 D. B. Adams ..... Standing 690 ft.
Buck & Coursey's No. 1 Trevino, Sur. 1..... Drlg. 1,640 ft.

ZAVALA COUNTY

Tritex Oil Co.'s No. 1 Clay Burns ..... Drlg. 730 ft.
Tritex Oil Co.'s No. 4 West ..... Drlg. 795 ft.
Tritex Oil Co.'s No. 1 Childress ..... Drlg. 1,095 ft.

LOUISIANA-ARKANSAS PROVEN AREAS

(Continued from Page 58)

The Texas Co.'s No. 3 Hunter, 990 ft. W, 330 ft. N, SE cor., Sec. 8-19-14 ..... Flowing 190 bbls. S.W. small amount of oil on air; arranging to plug back; T.D. 2,448 ft.
The Texas Co.'s No. 5 Hunter, 990 ft. N, 272 ft. W, SE cor. Sec. 9-19-14 ..... W.O.S.R. 2,439 ft.
The Texas Co.'s No. 6 Hunter, 165 ft. N, 330 ft. E, SW cor. Sec. 9-19-14 ..... Rigging up.

CADDO PARISH—OIL CITY

Arrow Synd.'s No. 1 Pender, 200 ft. N, 440 ft. E, SW cor., NW NW, Sec. 11-20-15 ..... Drlg. sand rock 1,820 ft.
W. D. Chew's No. 5 fee, Sec. 33-21-16 ..... Cmtd. 4½-in. 2,265 ft; T.D. 2,330 ft.
Gulf Ref. Co.'s No. 20-A Levee Board 1,570 ft. S, 263 ft. W, NE cor. NW, Sec. 34-21-16 ..... Began drlg. Oct. 21; cmtd. 10-in. 84 ft.
Magnolia Pet. Co.'s No. 19 Doan-Thigpen, 330 ft. N, 990 ft. W, SE cor. Sec. 6-20-15 ..... Began drlg. Oct. 18; cmtd. 15½-in. 104 ft.; drlg. 866 ft.
Magnolia Pet. Co.'s No. 18 Dillon, 165 ft. S, 500 feet E, NW cor., Sec. 24-21-15 ..... Fishing sand pump 1,750 ft.; old T.D. 4,866 ft.
Shreveport Oil Corp.'s No. 1 Guy, NW NE, Sec. 32-21-15.. Tested S.W. with show of oil; S.D. for orders; T.D. 2,300 ft.
Simplex Oil Co.'s No. 7 Hunsicker, 670 ft. W, 400 ft. S, NE cor. SE, Sec. 15-20-15 ..... Rigging up.
The Texas Co.'s No. 72 Levee Board, 725 ft. N, 210 ft. E. SW cor. SE, Sec. 27-21-16 ..... Rigging up.
J. C. Tippe.t's No. 1 Levee Board, 1,120 ft. W, 200 ft. N, SE cor. SW, Sec. 26-21-16 ..... Began drlg. Oct. 20; cmtd. 10-in. 40 ft.; drlg 1,160 ft.

CADDO PARISH—LEWIS

Snake Creek Oil Co.'s No. 1 Levee Board, SW NW, Sec. 9-21-16 ..... Tested dry with show of oil and S.W.; S.D.; T.D. 2,328 ft.

CLAIBORNE PARISH HOMER

Oakes et als' No. 1 Richardson, NE SE, Sec. 19-21-7 .... S.D. 1,112 ft; in litigation.

LASALLE PARISH—URANIA

Air Lift Oil Co.'s No. 8 Urania, Sec. 18-10-2e ..... Cmtd. 6-in. 1,510 ft; 7-ft. sand; T.D. 1,517 ft.
Ark. Fuel Co.'s No. 5 Urania, 200 ft. S, 200 ft. E, NW cor. NE SE, Sec. 24-10-1e ..... Rigging up.
Kinney, Hardtner & Randall's No. 1 Kinney, SW SW, Sec. 7-10-2e ..... S.D. 1,570 ft.
Philp et als' No. 1 Urania, SE cor. NE NE, Sec. 1-10-1e.. Tested 500,000 ft. gas and sanded up; C.O.; setting liner to test; T.D. 730 ft.
Randall et als' No. 3 Urania, Sec. 1-10-1e ..... S.D. 675 ft.
Trio Oil Co.'s No. 2 Urania, NE cor. SW SW NW, Sec. 19-10-1e ..... Rigging up.

MOREHOUSE PARISH

Bahan & Bahan's No. 1 Feazel, 330 ft. S, 280 ft. W, NE cor., Sec. 3-20-4 ..... Began drlg. Oct. 20; drlg 100 ft.
J. S. Herkness' No. 10 Bowles, 1,914 ft. N, 528 ft. W, SE cor. SW, Sec. 17-20-5 ..... Cmtd. 6-in. 2,176 ft.
J. S. Herkness' No. 11 Bowles, 4,620 ft. S, 1,980 ft. E, NW cor. Sec. 18-20-5 ..... Cmtd. 10-in. 184 ft.
J. S. Herkness' No. 12 Bowles, 3,392 ft. E, 3,300 ft. S, NW cor. Sec. 18-20-5 ..... Location.
Magnolia Pet. Co.'s No. 5 U. S., 620 ft. N, 330 ft. W, SE cor. NE SW, Sec. 29-21-5 ..... Estimated 5,000,000 ft. gas; drill stem stuck; sidetracking; T.D. 2,363 ft
Southern Carbon Co.'s No. 12 Tensas, 660, ft. S, 660 ft. E, NW cor., Sec. 2-20-4 ..... Drlg. shale and boulders 1,785 ft.
United Carbon Co.'s No. 2 Patton, 660 ft. N, 660 ft. E, SW cor. SE, Sec. 2-20-4 ..... Location.
United Carbon Co.'s No. 3 Patton, 660 ft. W, 660 ft. S, NE cor. SE, Sec. 2-20-4 ..... Location

OUACHITA PARISH

Amalgamated Carbon Co.'s No. 2 Cole, 742 ft. E, 703 ft. S, NW cor., Sec. 43-19-4 ..... Rigging up.
Amalgamated Carbon Co.'s No. 3 Cole, 1,616 ft. E, 731 ft. S, NW cor., Sec. 42-19-4 ..... Drlg. gumbo 1,100 ft.
Ark.-La. P. L. Co.'s No. 3 Rea & Green, 1,526 ft. W, 1,350 ft. S, NE cor., Sec. 11, in Sec. 32-18-4 ..... Cmtd. 6⅝-in. 2,158 ft.
Austin & Jordan's No. 1 Albright, 1,597 ft. E, 744 ft. N, common cor. Secs. 10, 9 and 13 in Sec. 13-18-3 ..... Location.
Austin & Jordan's No. 2 McGuire, 2,561 ft. E, 844 ft. N, SW cor., Sec. 62-18-3 ..... Began drlg. Oct. 18; cmtd. 12½-in. 183 ft., 8-in. 843 ft.
Chauvin Gas Co.'s No. 1 Slagle Johnson, 645 ft. S, 567 ft. W, NE cor., Sec. 49-18-4 ..... Began drlg. Oct. 17; cmtd. 12-in. 186 ft., 8-in. 852 ft.

Chauvin Gas Co.'s No. 2 Slagle Johnson, 3,498 ft. S, 26 ft. E, NW cor. Sec. 49-18-4 ..... Location.
Chauvin Gas Co.'s No. 3 Slagle Johnson, 2,539 ft. S, 55 ft. E, NW cor. Sec. 47-18-4 ..... Location.
Chauvin Gas Co.'s No. 4 Slagle Johnson, 4,505 ft. S, 257 ft. E, NW cor. Sec. 47-18-4 ..... Location.
Greenwood Prod. Co.'s No. 2 Phillips, 660 ft. N, 198 ft. W, SE cor., Sec. 18-19-4 ..... Began drlg. Oct. 16; cmtd. 12-in. 156 ft; 8-in. 795 ft; 6-in. 2,134 ft.

Hope Producing Co.'s No. 1 Fairbanks, 660 ft. N, 624 ft. E, SW cor. SE, Sec. 25-20-4 ..... Cmtd. 8-in. 833 ft.
Hope Producing Co.'s No. 2 Fairbanks, 1,876 ft. E, 628 ft. N, SW cor. SE, Sec. 25-20-4 ..... Location.
Hope Producing Co.'s No. 3 Fairbanks, 1,876 ft. E, 628 ft. S, NW cor. NE, Sec. 36-20-4 ..... Location.
G. E. Jordan's No. 1 Anding, NW NE, Sec. 18-18-5 ..... Plugged back to 2,334 ft; T.D. 2,480 ft.

Jordan Drlg. Co.'s No. 5 Cole, 680 ft. S, 602 ft. W, common cor. Secs. 1, 2 and 35, in Sec. 35-18-3 ..... Drlg. shale and boulders 1,850 ft.
Mack & Pipes' No. 2 Slagle-Johnson, 446 ft. S, 649 ft. W, northwesterly cor., Sec. 47, in Sec. 48-18-4 ..... Location.
Mack & Pipes' No. 3 Slagle-Johnson, 642 ft. S, 530 ft. W, northeasterly cor., Sec. 47, in Sec. 47-18-4 ..... Cmtd. 6-in. 2,123 ft.; drlg plug.
Magnolia Pet. Co.'s No. 2 fee 401, 660 ft. S, 660 ft. E, NW cor., Sec. 2-18-3 ..... Derrick.
Magnolia Pet. Co.'s No. 4 U. S., Sec. 20-19-5; reported completed July 31, in error ..... Tested 1,000,000 ft. gas at 515 lbs. rock pressure; set liner 2,528 ft; bailed dry; plugged back to 2,200 ft.; est. 500,000 ft. gas 2,990 ft; W.O; T.D. 2,543 ft.

Palmer Corp.'s No. 1 Cagle, 1,964 ft. S, 476 ft. E, NW cor., Sec. 7-18-5 ..... Cmtd. 8-in. 857 ft.; drlg 2,023 ft.
J. E. Sandridge, Jr.'s No. 1 W. E. Montgomery, 568 ft. N, 410 ft. E, SW cor., Sec. 18-18-5 ..... Drlg. 2,125 ft.
Southern Carbon Co.'s No. 54 fee, 660 ft. N, 674 ft. W, SE cor. NE, Sec. 13-19-4 ..... Drlg. 2,620 ft.
Southern Carbon Co.'s No. 4 Phillips, 660 ft. S, 660 ft. E, NW cor., Sec. 3-19-4 ..... Rigging up.
Stubbs, trustee's No. 1 Linton Stubbs, 203 ft. E, 121 ft. S, Sec. 19-19-4 ..... Cmtd. 6-in. 2,140 ft.
Trousdale & Wright's No. 1 Kate Cole, 296 ft. S, 47 ft. W, common cor. Secs. 8, 9 and 42 in Sec. 42-18-4 ..... Cmtd. 6-in. 2,126 ft.
United Oil & Nat. Gas Products Co. of La.'s No. 5 Guthrie, 6,896 ft. N, 6,022 ft. W, cor. Secs. 49, 26, and 25, Sec. 49-20-5 ..... Derrick.
United Oil & Nat. Gas Products Co. of La.'s No. 2 Cole, 660 ft. S, 594 ft. E, C, Sec. 26-20-4 ..... Derrick.
United Oil & N. G. Products Co.'s No. 1 Spade, 660 ft. N, 660 ft. W, SE cor. NE, Sec. 35-19-3 ..... Location.

RED RIVER PARISH

Joe Danciger et als' No. 1 Pickett, 6,621 ft. S, 2,623 ft. W, NE cor., Sec. 15-13-11, in Sec. 23-13-11 ..... C.O. 2,400 ft; T.D. 2,555 ft.
Root Refineries, Inc.'s No. 1 Home State & Savings Bank, 330 ft. N, 330 ft. W, C, Sec. 8-13-10 ..... Oil show 2,570 ft; drill stem test, S.W; cored sand showing gas 2,598 ft; S.D. 2,667 ft.
Triple Oil Co.'s No. 1 W. M. Pollock, Sec. 33-13-11 ..... Cmtd. 6⅝-in. 2,456 ft; T.D. 2,470 ft.

RICHLAND PARISH

Ark.-La. P. L. Co.'s No 1 Chenault, 1,980 ft. W, NW, C, SE SE, Sec. 2-16-6 ..... Cmtd. 12½-in. 960 ft.
W. C. Feazel's No. 1 Brown, 2,800 ft. W, 1,760 ft. S, NE cor., Sec. 27-16-6 ..... Tested 500,000 ft. gas 2,450 ft.; made second test, same amount gas 2,460 ft; W.O.

W. C. Feazel's No. 2 Brown, 1,940 ft. W, 185 ft. N, SE cor. Sec. 22-16-6 ..... Cmtd. 6-in. 2,978 ft.
Hope Prod. Co.'s No. 1 J. H. Hemler, 660 ft. S, 660 ft. W, NE cor., Sec. 11-16-6 ..... Drlg. shale 2,250 ft.
Hope Prod. Co.'s No. 1 L. R. Hemler, 600 ft. S, 495 ft. W, NE cor., Sec. 22-16-6 ..... Began drlg. Oct. 20; cmtd. 15½-in. 202 ft.

Hope Prod. Co.'s No. 1 Thomason, 3,366 ft. W, 660 ft. S, NE cor., Sec. 11-16-6 ..... Drlg. gummy shale 2,142 ft.
Industrial Gas Co.'s No. 1-A J. H. Hemler, 1,431 ft. E, 660 ft. S, NW cor. Sec. 12-16-6 ..... Rigging up.
Industrial Gas Co.'s No. 1 J. R. Hodge, 3,259 ft. E, 1,320 ft. S, center Sec. 7-16-7 ..... Rigging up.
Industrial Gas Co.'s No. 1-C Sartor, 536 f.. N, 1,333 ft. E, SW cor. NW, Sec. 21-16-6 ..... Rigging up.
International Gas Products Co.'s No. 1 Boughton, Sec. 33-16-6 ..... Rigging up.
Magnolia Pet. Co.'s No. 2 Hatch, 180 ft. N, 660 ft. W, SE cor. NE SE, Sec. 2-15-5 ..... Tested 103 joints S.W. 2,700 ft; drlg 2,720 ft.; tested S.W. 2,858 ft.; arranging to deepen.

Magnolia Pet. Co.'s No. 4 C. M. Noble, 400 ft. S, 660 ft. W, NE cor. SE NE, Sec. 35-16-5 ..... Location.
Magnolia Pet. Co.'s No. 5 C. M. Noble, 600 ft. S, 600 ft. W, NE cor. NW, Sec. 36-16-5 ..... Began drlg. Oct. 19; cmtd. 15½-in. 207 ft.

M. L. Meredith's No. 1 Holdness, 1,980 ft. S, 990 ft. W, NE cor., Sec. 15-16-6 ..... Rigging up.
Northern La. Nat. Gas Co.'s No. 4 Boykin, Sec. 20-17-14 ..... Cmtd. 6-in. 2,299 ft; arranging to pump in clear water to kill offset crater; T.D. 2,398 ft.

Northern La. Nat. Gas Co.'s No. 1-A Colvin, 1,320 ft. E 370 ft. S, center Sec. 34-17-6 ..... Rigging up.
Northern La. Nat. Gas Co.'s No. 1 A. Purvis, 1,282 ft. S, 183 ft. E, center Sec. 34-17-6 ..... Derrick.
Northern La. Nat. Gas Co.'s No. 1 C. M. Purvis, 1,821 ft. E, 630 ft. S, NW cor. SE NW, Sec. 3-16-6 ..... Rigging up.
Palmer Corp.'s No. 2 Earle, 1,980 ft. N, 1,320 ft. W, SE cor., Sec. 31-17-6 ..... Rigging up.
Palmer Corp.'s No. 1 Eubanks, 1,100 ft. N, 350 ft. E, SW cor. SE NW, Sec. 26-17-6 ..... Drlg. 8⅛-in plug; T.D. 2,312 ft.
Palmer Corp.'s No. 1 McCoy, Sec. 29-16-6 ..... Comp. June 10, 1927 by S. D. Hunter; 15,000,000 ft. gas; recmtd. 4½-in. 2,430 ft.; bailing to test 2,438 ft.

Palmer Corp.'s No. 4 Rhymes, 660 ft. S, 1,320 ft. W, NE cor. NW, Sec. 28-17-6 ..... Drlg. lime 3,049 ft.
Southern Carbon Co.'s No. 1 S. R. Humble, 600 ft. N, 600 ft. W, SE cor.; Sec. 26-16-6 ..... Rigging up.
United Carbon Co.'s No. 1 Roberts, 1,650 ft. N, 600 ft. W, SE cor., Sec. 21-16-6 ..... Location.

SABINE PARISH—PLEASANT HILL

Bridges-Clark Oil Co.'s No. 2 Williams, 2,150 ft. W, 2,000 ft. S, NE cor., Sec. 33-10-12 ..... Drlg. 2,870 ft.
Magnolia Pet. Co.'s No. 4 E. E. Hall, 855 ft. N, 343 ft. W, SE cor. NW SW, Sec. 33-10-12 ..... Cmtd. 16-in. 205 ft.; drlg. chalk 1,856 ft.

Reid Clark and others' No. 2 Moore, 1,600 ft. N, 330 ft. W, SE cor. Sec. 32-10-12 ..... Derrick; No. 1 drilled by Seip and others.

UNION PARISH

Bahan & Bahan's No. 1 Bess, 47 ft. S, 64 ft. W, NE cor. NW, Sec. 11-20-3 ..... Began drlg. Oct. 20; drlg. 130 ft.
E. S. Hall's No. 2 Spencer, 317 ft. W, 182 ft. S, NE cor. NW SE, Sec. 2-20-3 ..... Cmtd. 12-in. 186 ft.; drlg. 340 ft.
Interstate Nat. Gas Co.'s No. 23 fee, 660 ft. S, 660 ft. E, NW cor. Sec. 23-20-3 ..... Cmtd. 8-in. 825 ft.

WEBSTER PARISH—COTTON VALLEY

Magnolia Pet. Co.'s No. 1 McCook & Hibbler, C SW SW, Sec. 22-21-10 ..... Cored 9 ft. saturated sand 6,949-58 ft; swedging collapsed joint 8⅛-in. at 3,950 ft.; to set 5¾-in. for test.

Ohio Oil Co.'s No. 45 Bodcaw, 660 ft. N, 600 ft. W, SE cor. SW SW, Sec. 21-21-10 ..... Drlg. 4,041 ft.
Ohio Oil Co.'s No. 46 Bodcaw, 660 ft. N, 660 ft. E, SW cor. SW NW, Sec. 28-21-10 ..... Location.
Palmer Corp.'s No. 2 Miller, 520 ft. N, 504 ft. E, SW cor. SW, Sec. 28-21-10 ..... Rigging up.
Standard Oil Co.'s No. 3-D Bodcaw, 660 ft. N, 660 ft. E, SW cor. SE NE, Sec. 28-21-10 ..... Bailed casing 4,312 ft.

WEBSTER PARISH—SAREPTA AND SHONGALOO

J. W. Clark, trustee's No. 1 L. H. Wise, 1,980 ft. E, 660 ft. S, NW cor., Sec. 30-23-9 ..... W.O.S.R; 6 ft. sand; T.D. 2,754 ft.
Pat Hudson's No. 1 L. S. Gardner, 150 ft. E, 200 ft. S, NW cor. SW NE, Sec. 1-22-11 ..... Cmtd. 6-in. 2,734 ft.
F. E. Estes' No. 2 Pardee, 1,270 ft. W, 50 ft. S, NE cor. NW, Sec. 3-22-11 ..... Drlg. 250 ft.
Magnolia Pet. Co.'s No. 1 C. O. Bailey, 100 ft. N, 660 ft. E, SW cor. NW NE, Sec. 29-23-9 ..... Plugged back to 2,761 ft.; T.D. 2,782 ft.

Magnolia Pet. Co.'s No. 1 N. T. Knight, 330 ft. S, 330 ft. E, NW cor. SE SE, Sec. 33-23-9 ..... 800 ft. S.W; 800 ft. oil; bailing to test; T.D. 2,692 ft.
Magnolia Pet. Co.'s No. 2 Scroggins, 330 ft. S, 376 ft. E, NW cor. SW NW, Sec. 1-22-11 ..... Cmtd. 8⅛-in. 2,697 ft; T.D. 2,708 ft.
Sarepta Oil Co.'s No. 1 L. S. Gardner, 300 ft. S, 300 ft. W, C, Sec. 1-22-11 ..... Waiting on 6-in. to set at 2,681 ft.
Woodmansee et als' No. 1 Boyd, 200 ft. S, 200 ft. E, NW cor. SE SW, Sec. 3-22-11 ..... Derrick.

WINN PARISH—URANIA

Gardner, Hunter & Brown's No. 16 Harper, 330 ft. N, 400 ft. E, SW cor. NW NE, Sec. 26-10-1e ..... W.O.S.R; 1,495 ft.

ARKANSAS

NEVADA COUNTY

C F. Steele's No. 1 E. W. Groves, Sec. 21-14-20 ..... S.D. for wtr; T.D. 2,821 ft.

OUACHITA COUNTY—SMACKOVER

Ark. Nat Gas Corp.'s No. 2 Avera, 330 ft. S, 330 ft. E, NW cor. SE SW, Sec. 35-15-15 ..... Began drlg. Oct. 21; drlg. 100 ft.
L. H. Hamilton's No. 1 Arnold & Doyle, SE SE, Sec. 23-15-16 ..... Standing 400 ft. in fluid; 23 ft. broken sand; T.D. 3,010 ft.

Magna Prod. Co.'s No. 7 Linahan, NW cor. SE NW, Sec. 36-15-16 ..... Rigging up.
Magna Prod. Co.'s No. 5-B McKenzie, Sec. 36-15-16 ..... W.O.S.R; T.D. 2,006 ft.
Marine Oil Co.'s No. 7-A Haya, Sec. 4-16-15 ..... W.O.S.R. 450 ft. oil, 20 ft. sand; T.D. 2,362 ft

Oil Field Corp.'s No. 10 McKenzie, 265 ft. E, 185 ft. N, SW cor, SE NE, Sec. 36-15-16 ..... Cmtd. 6-in. 1,947 ft.
Phillips Pet. Co.'s No. 4 Scott, 250 ft. S, 350 ft. W, NE cor. SW NE, Sec. 34-15-15 ..... Pumped 200 bbls. fluid, 60% S.W.; arranging to plug back 4 ft.; T.D. 2,024 ft.

Phillips Pet. Co.'s No. 3 Clayton, NE cor. NW NE, Sec. 34-15-15 ..... Drlg. 6⅝-in. plug; T.D. 1,999 ft.
Shell Pet. Corp.'s No. 5 Williams, 210 ft. S, 260 ft. W, NE cor. NW SE, Sec. 34-15-15 ..... W.O.S.R; 1,200 ft. fluid in hole; T.D. 1,971 ft.

Simms Oil Co.'s No. 4 Johnson, 330 ft. N, 85 ft. E, SW cor. NE SE, Sec. 34-15-15 ..... Cmtd. 6⅝-in. 1,949 ft.
Skelly Oil Co.'s No. 2 Langley, 250 ft. N, 250 ft. W, SE cor. NW SW, Sec. 35-15-15 ..... Rigging up.
Southern Prod. Co.'s No. 1-A Watts, SW cor. SW SE, Sec. 27-15-15 ..... Began drlg. Oct. 16; cmtd. 10-in. 80 ft.; drlg 1,345 ft.

Standard Oil Co.'s No. 13 Arnold, 200 ft. S, 200 ft. E. NW cor. NE NE, Sec. 26-15-16 ..... Location.
Standard Oil Co.'s No. 8 Powell, 200 ft. S, 200 ft. W. NE cor. SE NW, Sec. 34-15-15 ..... Cmtd. 6⅝-in. 1,959 ft.; cmtg. short string 4½-in.; T. D. 2,017 ft.
J. D. Wingfield's No. 1 Martin, SW cor., Sec. 26-15-15 .. Set 6⅝-in. 2,085 ft; corrected T. D. 2,110 ft.

OUACHITA COUNTY—STEPHENS

La. Oil Refining Corp.'s No. 1 Green, 330 ft. S, 330 ft. E, NW cor. Sec. 22-15-19 ..... Completed March 28, 1926; 100 bbls. 1,555 ft.; S.D.; coring 2,265 ft.

UNION COUNTY—CHAMPAGNOLLE

Magnolia Pet. Co.'s No. 1 Schmidt, 300 ft. N, 300 ft. W, SE cor. NW SW, Sec. 5-17-14 ..... Tested 15,000,000 ft. dry gas 2,708-15 ft; cmtd. 8-in. 2,708 ft; T.D. 2,715 ft; tested 2,200,000 ft. gas 2,715 ft; coring 2,820 ft.

UNION COUNTY—EL DORADO

J. P. Hawkins' No. 1 Goodwin, Sec. 3-17-15 ..... S.D. 2,575 ft; W.O.
Rice et als' No. 1 W. Raitey, 150 ft. S, 150 ft. E, NW cor. SW, Sec. 7-17-15 ..... Spudded July 18; cmtd. 10-in. at 92 ft.

UNION COUNTY—SMACKOVER

Ark. Fuel Oil Co.'s No. 5 Alphin, Sec. 11-16-16 ..... O.W.D.D.; perforated csg. 1,960-70 ft.; swabbed dry; filled up 40 ft. oil in hour, W. O.

Foster et als' No. 1 J. V. Spohr, 330 ft. S, 330 ft. W, NE cor. SE SW, Sec. 35-15-16 ..... Rig up.
E. M. Jones' No. 1 H. Murphy, 211 ft. S, 211 ft. E, NW cor. Lot 3, NW, Sec. 2-16-15 ..... W.O.S.R; 90 ft. fluid in hole from 17 ft. broken sand; T.D. 1,981 ft.

Lion Oil Ref. Co.'s No. 1 James, CWL, Lot 2, NW, Sec. 6-16-15 ..... Cmtd. 6⅝-in. 1,942 ft.; drlg. in T.D. 1,968 ft.
Joe Marr's No. 2 Goodwin, 150 ft. E, 250 ft. N, SW cor., Sec. 3-16-16 ..... S.D. 2,470 ft.
Shell Pet. Co.'s No. 1 Carroll, 1,320 ft. W, 330 ft. N, SE cor. NE SW, Sec. 19-18-16 ..... Top Nacatoch 2,053 ft.; reaming to bottom; T.D. 2,095 ft.

EAST TEXAS

PANOLA COUNTY

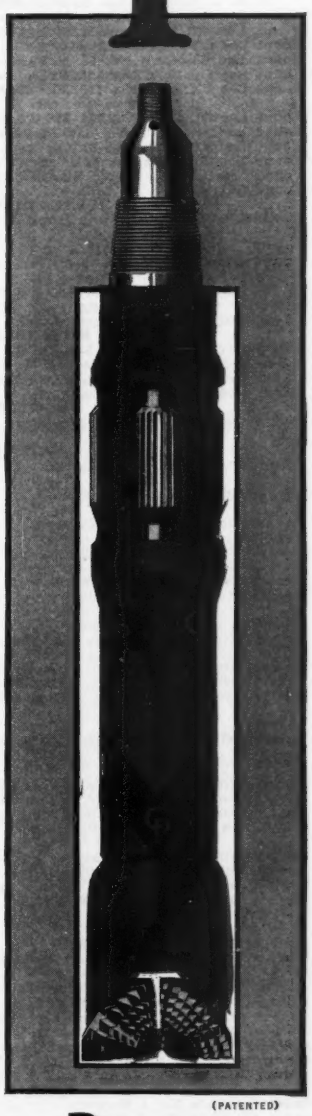
Ark.-La P. L. Co.'s No. 6 Louis Werner, B. C. Jordan Sur. ..... Setting 2½-in. tubing and packer 945 ft.
Eureka Nat. Gas Co.'s No. 1 Jeter, 300 ft. S, 300 ft. W, NE cor. John Womack Sur. ..... Drlg. 2,690 ft.
S. H. Gardner's No. 5 Brumble, 5,966 ft. E, 4,132 ft. S, NW cor. B. C. Jordan Sur. ..... S. D. for water; T.D. 1,000 ft.
S H. Gardner's No. 4 Roquemore, 5,176 ft. E, 4,432 ft. S, NW cor. B. C. Jordan Sur. ..... Location.
Magnolia Pet. Co.'s No. 3 T. C. Adams, 550 ft. S, 280 ft. E, NW cor. Jas. Matthews Sur. ..... Drlg. 2,815 ft.
Magnolia Pet. Co.'s No. 5 G. C. Tiller, 1,114 ft. W, 303 ft. N, SE cor. Jane Thorpe Sur. ..... Began drlg. Oct. 19; cmtd. 13⅜-in. 148 ft.

Magnolia Pet. Co.'s No. 6 G. C. Tiller, 393 ft. S, 1,990 ft. E, NW cor. Jane Thorpe Sur. ..... Location.
Nat. Gas Prod. Co.'s No. 10 Roquemore, B. C. Jordan Sur. ..... Began drlg. Oct. 20; cmtd. 10-in. 42 ft.
Nat. Gas Prod. Co.'s No. 11 Roquemore, B. C. Jordan Sur. ..... Rigging up.
Nemours Corp.'s No. 6 G. C. Tiller, 2,330 ft. S, 300 ft. W, NE cor. W. D. Matthews Survey ..... Location.
The Texas Co.'s No. 7 G. W. Brumble, 3,415 ft. W, 330 ft. N, SE cor. E. F. Mitcheson Sur. ..... Drlg. packed sand 1,956 ft.
The Texas Co.'s No. 8 G. W. Brumble, 1,085 ft. E, 330 ft. N, SW cor. John Womack Sur. ..... Derrick.
D. Thomason's No. 2 Tillery, 393 ft. N, 332 ft. E, SW cor. Jane Thorpe Sur. ..... Cmtd. 10-in. 40 ft.; drlg. 1,202 ft.

With the NEW CP "Tucone" ROCK BIT

9 POINTS OF SUPERIORITY

1. SAFETY—Extra large drop-forged spindle bearings. No cone bushings. One-piece bit head. One-piece reamer body. FISHING ELIMINATED
2. CIRCULATION—Fluid stream jets directly on bottom of hole. No side-wall hydraulicking. STRAIGHT HOLE
3. CLEARANCE—Over 34% of hole area is clear. "Balling up" eliminated. STRAIGHT HOLE
4. CONES AND SPINDLE BEARINGS—Cones run on extra large replaceable drop-forged spindle bearings. Stronger and thicker cone wall section due to absence of bushing. GREATER STRENGTH
5. REAMERS—Three units, properly spaced and located for accurate reaming. New type reamer bearing eliminates wear on reamer body. KEEPS GAUGE — ALWAYS!
6. ONE-PIECE BODIES—Both bit and reamer bodies are solid manganese steel. GREATER STRENGTH
7. REPLACEMENTS—Cone-and-bearing units and reamers easily and quickly changed. TIME SAVED
8. LOW MAINTENANCE—Body repairs eliminated. No wear on bit head or reamer body. MONEY SAVED
9. CONE SERVICE—New CP "Red Head" cutting cones can be refitted on your used bearings (only at authorized CP Service Stations) and guaranteed by CP to be as good as if a new bearing were used—at a great saving to you! ECONOMY

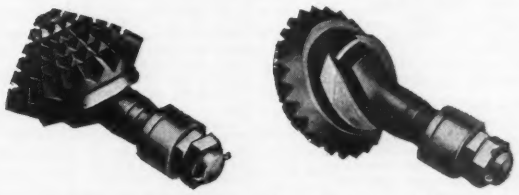


(PATENTED)

CUTTING CONES AND BEARINGS ARE A UNIT!

Cones run on extra large replaceable drop-forged spindle bearings. Stronger and thicker cone wall section due to absence of bushing.

GREATER STRENGTH!



Front and Rear View of CP Cutting Cone Unit

THE CP Cutting Cone Unit consists of a cutting cone with deep-cut teeth designed to meet various conditions, and an extra large spindle bearing on which the cone revolves. No cone bushings; cone wall section is stronger and thicker. Both cone and spindle bearing are finest quality chrome nickel steel, drop-forged, heat-treated and hardened for maximum strength and durability. Bearings are made considerably larger than necessary—to insure a wide margin of safety when overloading the bit.

CHICAGO PNEUMATIC TOOL COMPANY

General Offices: Chicago Pneumatic Bldg., 6 East 44th St., New York

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KEEPS GAUGE ...ALWAYS! OT-14

That the use of CP "Tucone" Rock Bits will unquestionably result in lower drilling costs, we are ready and willing to prove in any way YOU say! An inquiry to any of the above addresses will receive immediate attention.

GULF COAST FIELDS AND WILDCATS

(Continued from Page 54)

BOLING—FORT BEND AND WHARTON

Sun Oil Co.'s No. 9 E. C. Farmer ..... Drlg. cap rock 1,645 ft.
The Texas Company's No. 2 Pleasants, northwest ..... Abandoned 5,299 ft.

RACCOON BEND—AUSTIN COUNTY

Humble & Valley's No. 3 Mitchell ..... Rig.
Humble & Valley's No. 3 Beal ..... Derrick.
Humble & Valley's No. 6-A Walton ..... Rig.
Humble & Valley's No. 7-A Walton ..... Location.
Humble & Valley's No. 6-A Dietrichs ..... Drlg. sticky shale and boulders 2,646 ft.
Humble & Valley's No. 7-A Dietrichs ..... Drlg. rock 1,023 ft.
Humble Oil & Refg. Co.'s No. 8-A Dietrichs ..... Derrick.
Humble & Valley's No. 9-A Dietrichs ..... Derrick.
Humble & Valley's No. 10-B Dietrichs ..... Spudded.
Humble Oil & Refg. Co.'s No. 1 Dimear ..... Comp. flowing 867 bbls. oil 3,389 ft.
Humble & Valley's No. 4 Belleville School ..... Testing sand 3,392 ft.
Humble & Valley's No. 3 Woodley ..... Comp. flowing 35 bbls. in 2½ hours; 3,489 ft.
Humble & Valley's No. 4 Woodley ..... Derrick.
Humble & Valley's No. 5 Woodley ..... Location.
Humble & Valley's No. 2-A Grawunder ..... To pump 3,335 ft.
Humble & Valley's No. 3 Grawunder ..... Comp. flowing 420 bbls. 3,132 ft.
Humble & Valley's No. 4-B Grawunder ..... Sand and shale showing oil 3,132 ft.; cemented 6⅝-in. casing.
Humble & Valley's No. 5-B Grawunder ..... Derrick.
Humble & Valley's No. 6-B Grawunder ..... Rig.
Humble & Valley's No. 7-B Grawunder ..... Rig.
Humble & Valley's No. 10-B Grawunder ..... Derrick.
Humble & Valley's No. 4-C Grawunder ..... Derrick.
Humble & Valley's No. 5 Urban ..... Testing sandy shale showing oil 3,125 ft.
Humble & Valley's No. 6 Urban ..... Spudded.
Humble & Valley's No. 7 Urban ..... Derrick.
Humble & Valley's No. 5 Saunders ..... Location.
Humble & Valley's No. 4 Mueller ..... Comp. flowing 300 bbls. oil 3,474 ft.
Humble & Valley's No. 5 Mueller ..... Comp. flowing 600 bbls. oil 3,508 ft.
Humble & Valley's No. 6 Mueller ..... Drlg. shale and boulders 587 ft.
Humble & Valley's No. 7 Mueller ..... Derrick.
Humble & Valley's No. 2 Helmuth ..... To pump 3,482 ft.
Humble & Valley's No. 4-A Bracey ..... Drlg. shale and lime 1,030 ft.
Humble & Valley's No. 5-A Bracey ..... Rig.
Humble & Valley's No. 2 Ollie Wilson ..... Rig.
Humble & Valley's No. 1 McCasland ..... Drlg. sandy shale 3,387 ft.
Humble & Valley's No. 5 Gotosky ..... Drlg. shale 1,325 ft.
Humble & Valley's No. 6 Gotosky ..... Derrick.
Humble & Valley's No. 3 Sherrill ..... Derrick.
Humble & Valley's No. 5 Thompson ..... Derrick.
Humble & Valley's No. 4 Payne ..... Location.

DE WALT—FORT BEND COUNTY

Humble Oil & Refg. Co.'s No. 8 Brazos ..... Cemented casing to test 3,396 ft.
Humble Oil & Refg. Co.'s No. 8 Camp ..... Comp. flowing 600 bbls. 3,622 ft.
Humble Oil & Refg. Co.'s No. 9 Camp ..... Rig.
Humble Oil & Refg. Co.'s No. 1 Hagenson ..... To pump 3,811 ft.
Humble Oil & Refg. Co.'s No. 3 Deatherage ..... Comp. flowing 270 bbls. oil 3,737 ft.
Humble Oil & Refg. Co.'s No. 12 Sugarland ..... Drilled plug 3,734 ft.
Humble Oil & Refg. Co.'s No. 13 Sugarland ..... Derrick.
Humble Oil & Refg. Co.'s No. 6 Nelson ..... Comp. flowing 632 bbls. oil 3,690 ft.
Humble Oil & Refg. Co.'s No. 7 Nelson ..... Location.
Humble Oil & Refg. Co.'s No. 1 Peterson ..... Drlg. sandy shale 3,6[illegible] ft.
Humble Oil & Refg. Co.'s No. 1-B Sugarland ..... Drlg. sticky shale 2,8[illegible] ft.
Humble Oil & Refg. Co.'s No. 1-C Bankers Mortgage ..... Drlg. shale and lime 2,400 ft.

HUMBLE—HARRIS COUNTY

Continental Oil Co.'s No. 1 Wagner ..... Abandoned in shale 5,040 ft.
Continental Oil Co.'s No. 1 Cezeaux, south side ..... Total depth 4,520 ft.; plugged to 3,498 ft.; swabbing.
Humble Oil & Ref. Co.'s No. 5 Williams ..... Bailing 5,378 ft.
Humble Oil & Refg. Co.'s No. 6 Williams ..... Rig.
Humble Oil & Refg. Co.'s No. 7 Williams (south) ..... Rig.
Humble Oil & Refg. Co.'s No. 1 Glass, south ..... Drlg. packed sand 6,331 ft.
Humble Oil & Refg. Co.'s No. 1 Oates ..... Drlg. shale 3,234 ft.
Humble Oil & Refg. Co.'s No. 1 Trahon ..... Drlg. shale and lime 2,590 ft.
Harvey Smith et al's No. 2 Ward ..... Drlg. gumbo 2,342 ft.
Morris Investment Co.'s No. 1 fee ..... Drlg. gumbo 948 ft.
South Texas Petroleum Co.'s No. 11 Morris, south side ..... Drill stem stuck 5,326 ft.; sidetracking 4,770 ft.
South Texas Petroleum Co.'s No. 12 Morris (south) ..... Rig.
South Texas Petroleum Co.'s No. 1 Lee, south flank ..... Reaming 4,492 ft.
Sun Oil Co.'s No. 3 Bender (northwest) ..... Drlg. gumbo 959 ft.
The Texas Company's No. 265 Landslide, south ..... To pump 5,443 ft.
The Texas Company's No. 270 Landslide (south) ..... Drlg. gumbo 2,072 ft.
The Texas Company's No. 41 Stevenson (south) ..... Drlg. gumbo 868 ft.
The Texas Company's No. 1 Dunman ..... Cemented 6⅝-in. casing 4,587 ft.
The Texas Company's No. 23 House ..... Drlg. sticky shale 4,194 ft.

BLUE RIDGE—FORT BEND COUNTY

Cunningham Prod. Co.'s No. 6 Blakely (workover) ..... To deepen.
Gulf Production Co.'s No. 17 Luscher ..... Salt 4,219 ft.; sidetracking 3,020 ft.
Sinclair Oil & Gas Co.'s No. 5 Davidson (workover) ..... Drlg. 3,800 ft.
So. Texas Petroleum Co.'s No. 5 Blakely ..... Drlg. shale 2,106 ft.

PIERCE JUNCTION—HARRIS COUNTY

Anderson & Plummer's No. 6 Whitehead (workover) ..... Drlg. lime 3,210 ft.
Navarro Oil Co.-Texas Exploration Co.'s No. 17 Dooley ..... Drlg. sandy shale and lime 4,500 ft.
Navarro Oil Co.-Humble's No. 5 Dooley ..... Drlg. rock 2,483 ft.
Rio Bravo Oil Co.'s No. 11 B. Settegast ..... Drlg. shale 4,538 ft.
Rio Bravo Oil Co.'s No. 16-A Settegast, west ..... Drlg. gumbo 2,571 ft.
Rio Bravo Oil Co.'s No. 17-A Settegast, west ..... Rig.
Saxet Gas Co.'s No. 2 Herman estate, southwest ..... Set screen 4,525-52 ft.; testing.
Saxet Gas Co.'s No. 4 Herman (southwest) ..... Drlg. gumbo and lime 4,546 ft.
Saxet Gas Co.'s No. 5 Herman (southwest) ..... Derrick.
Superior Oil Corp.'s No. 5-B Settegast (workover) ..... Reset screen 4,634 ft.
J. F. Barron's No. 3 Fitzsimmons ..... Derrick.
Shaw & Texas Exploration Co.'s No. 2-F Fitzsimmons ..... Derrick.
T. G. Shaw's No. 2 Dooley ..... Total depth 5,906 ft.; sidetracking 4,861 ft.
Smith & Plummer's No. 1 Settegast ..... Rig.

LIBERTY—LIBERTY COUNTY

Abercrombie & Harrison's No. 4 fee (workover) ..... Pulling liner to deepen.
Empire Gas & Fuel Co.'s No. 7 Groggan ..... Coring 3,412 ft.
Empire Gas & Fuel Co.'s No. 5 Groggan ..... Drlg. rock 3,005 ft.
Liberty Oil & Sulphur Co.'s No. 1 Monroe ..... To test 539 ft.
Neches Oil Co.'s No. 2 Turner ..... Testing 779 ft.
Rio Bravo Oil Co.'s No. 1 Republic ..... Drlg. sticky shale 1,163 ft.
Sun Oil Co.'s No. 50 Mitchell ..... Pulling screen 3,541 ft.
Sun Oil Co.'s No. 51 Mitchell ..... Comp. flowing 1,200 bbls. oil 3,528 ft.
Sun Oil Co.'s No. 52 Mitchell ..... Derrick.
Sun Oil Co.'s No. 53 Mitchell ..... Spudded.
Yount Lee Oil Co.'s No. 18 Mitchell ..... Comp. flowing 200 bbls. oil 3,468 ft.
Yount Lee Oil Co.'s No. 19 Mitchell ..... Spudded.

HULL—LIBERTY COUNTY

Empire Gas & Fuel Co.'s No. 27 Barngrover, old well ..... Comp. flowing 800 bbls. oil 3,589 ft.
W. B. Flynn's No. 8 Harrison (workover) ..... Pulling liner.
Gulf Production Co.'s No. 50 Phoenix (workover) ..... Drlg. 908 ft.
Gulf Production Co.'s No. 56 Phoenix (workover) ..... Drlg. 3,401 ft.
Humble Oil & Refg. Co.'s No. 12 Hooks-Spell ..... Drlg. sand 301 ft.
Republic Production Co.'s No. 35 Dolbear (workover) ..... Drlg. 4,612 ft.
Republic Production Co.'s No. 76 Dolbear (workover) ..... Drlg. 2,293 ft.
Republic Production Co.'s No. 119 Dolbear ..... Comp. pumping 125 bbls. oil 2,796 ft.
Republic Production Co.'s No. 128 Dolbear (workover) ..... Drlg. 2,251 ft.
Sun Oil Co.'s No. 12 Carr ..... Abandoned 559 ft.
The Texas Company's No. 8 Hannah-Vacuum ..... Location.

BIG CREEK—FORT BEND COUNTY

Benedum & Trees' No. 1 J. F. Ahlers ..... Derrick.
Benedum & Trees' No. 1 Moore ..... Drlg. 3,781 ft.
Gulf Production Co.'s No. 35 Davis, (workover) ..... Drlg. 2,956 ft.
Gulf Production Co.'s No. 56 Davis ..... Comp. flowing 3,500 bbls. pipe line oil 4,170 ft.
The Texas Company's No. 3 Wheat (old well) ..... Pulling liner to deepen 3,900 ft.

LOST LAKE—CHAMBERS COUNTY

Pure Oil Co.'s No. 1 Mayes ..... Running tubing 2,846 ft.
Pure Oil Co.'s No. 4 Mayes ..... Drlg. lime rock 2,670 ft.
Pure Oil Co.'s No. 5 Mayes ..... Drlg. gumbo and lime 2,555 ft.
Pure Oil Co.'s No. 6 Mayes ..... Blew out 2,215 ft.; rebuilding derrick.
Pure Oil Co.'s No. 7 Mayes ..... Cemented casing 906 ft.
Pure Oil Co.'s No. 8 Mayes ..... Drlg. sand and boulders 900 ft.
Pure Oil Co.'s No. 3 Lost Lake ..... Shut down for repairs 3,451 ft.

NASH—BRAZORIA COUNTY

Rycade Oil Corp.'s No. 26 Wisdom ..... Drlg. sand and lime 5,234 ft.

SOUR LAKE—HARDIN COUNTY

Austin et al's No. 1 Watson ..... Rig.
Lake View Oil Co.'s No. 7 Minor ..... Drlg. 2,082 ft.
Gilbert Oil Co.'s No. 107 Gilbert ..... Rigging up.

ORANGE—ORANGE COUNTY

Brownie Babbett Oil Co.'s No. 8 McLean (workover) ..... Drlg. 3,033 ft.
Tillery Oil Co.'s No. 3-B State (workover) ..... Drlg. 3,373 ft.

GOOSE CREEK—HARRIS COUNTY

Cedar Bayou Oil Co.'s No. 11 Busch ..... Drlg. 1,917 ft.
Russell Ferrell's No. 4 Gillette (workover) ..... Rigging.
Humble Oil & Refg. Co.'s No. 76 Simms-Smith ..... Drlg. 3,182 ft.
Lake Shore Oil Co.'s No. 4 Duke ..... Drlg. 2,594 ft.
J. M. West, trustee, No. 3 Scorrega ..... Drlg. 718 ft.

SPINDLETOP—JEFFERSON COUNTY

Yount Lee Oil Co.'s No. 23 McFaddin (workover) ..... Drlg. shale and sand 5,195 ft.
Yount Lee Oil Co.'s No. 72 McFaddin (workover) ..... Testing sand and shale 4,329 ft.
Yount Lee Oil Co.'s No. 74 McFaddin (workover) ..... Drlg. shale 3,105 ft.
Yount Lee Oil Co.'s No. 85 McFaddin (workover) ..... Drlg. shale 4,760 ft.
Yount Lee Oil Co.'s No. 116 McFaddin ..... Testing oil sand 4,327 ft.
Yount Lee Oil Co.'s No. 117 McFaddin ..... Comp. flowing 1,100 bbls. oil 4,127 ft.
Yount Lee Oil Co.'s No. 118 McFaddin ..... Drlg. sand 4,151 ft.
Yount Lee Oil Co.'s No. 119 McFaddin ..... Rig.
Yount Lee Oil Co.'s No. 57 Gladys City (workover) ..... Drlg. sand 4,997 ft.
Yount Lee Oil Co.'s No. 84 Gladys City, (workover) ..... Swabbing 3,796 ft.
Yount Lee Oil Co.'s No. 96 Gladys City ..... Drlg. sand 4,121 ft.
Yount Oil Co.'s No. 97 Gladys ..... Drlg. sand 4,382 ft.

WEST COLUMBIA—BRAZORIA COUNTY

Continental Oil Co.'s No. 1 Hogg ..... Set two joints screen 4,736 ft.; failed to flow and running tubing; total depth 5,818 ft.
Gulf Production Co.'s No. 3-B Hogg ..... Tested salt water 3,140 ft.; drlg. hard sand and shale 3,151 ft.
Humble Oil & Refg. Co.'s No. 3 Smith ..... Cemented casing 4,809 ft.
Saxet Oil Co.'s No. 2 Hogg ..... Location.
The Texas Company's No. 25 Arnold ..... Location.

HIGH ISLAND—GALVESTON COUNTY

Gulf Production Co.'s No. 5-A Smith ..... Drlg. 2,723 ft.
Marrs McLean's No. 6 Cade (old well) ..... Drlg. 3,542 ft.
Marrs McLean's No. 12 Cade (workover) ..... To deepen.
Marrs McLean's No. 16 Cade ..... Reset screen 3,650 ft.; swabbing.

ORCHARD—FORT BEND COUNTY

Gulf Production Co.'s No. 19 Moore ..... Cemented 7-in. casing 6,058 ft.; total depth 6,242 ft.

REFUGIO—REFUGIO COUNTY

Benedum & Trees' No. 3 Rooke ..... Rebuilding derrick to deepen 3,865 ft.
Morgan Oil Corp.'s No. 2 Fox ..... Comp. gas well 1,250 lbs.; sand 3,660-70 ft.
Morgan Oil Corp.'s No. 2 City ..... Comp. flowing 250 bbls. pipe line oil; sand 3,678-86 ft.
Morgan Oil Corp.'s No. 3 City ..... Cemented 10-in. casing.
Morgan Oil Corp.'s No. 1 Johnson ..... Derrick.
Morgan Oil Corp.'s No. 1 Strauch ..... Rig.
Hewitt et al's No. 1 Cemetery ..... Cem. 12½-in. surface casing 446 ft.
Hewitt et al's No. 2 Cemetery ..... Cemented 12½-in. casing 470 ft.
Houston Gulf Gas Co.'s No. 6 Shelly ..... Set whipstock 3,600 ft.; total depth 5,700 ft.
Houston Gulf Gas Co.'s No. 1 Lambert ..... Cemented 12½-in. casing 490 ft.
Houston Gulf Gas Co.'s No. 8 Shelly ..... Drlg. rock 3,495 ft.
Houston Gulf Gas Co.'s No. 4 Fannie Heard (workover) ..... Cemented 4½-in. casing 3,654 ft.; to test oil sand; total depth 3,691 ft.
Houston Gulf Gas Co.'s No. 8 Fannie Heard ..... Sand showing oil; total depth 3,671 ft.; cemented 8¼-in. casing 3,649 ft.
Houston Gulf Gas Co.'s No. 3 Tom Heard ..... Rig.
Houston Gulf Gas Co.'s No. 2 Cummings ..... Derrick.
Houston Gulf Gas Co.'s No. 2 Morgan Shelly ..... Spudded.
Korona Oil Co.'s No. 3 Reilly ..... Flowing 75 bbls. oil daily; 3,669 ft.
Korona Oil Co.'s No. 4 Reilly ..... Rig.
Korona Oil Co.'s No. 5 Reilly ..... Derrick.
Mission Drlg. Co.'s No. 1 J. F. B. Heard ..... Reset liner and screen 3,645 ft.
Mission Drlg. Co.'s No. 2 Shelly ..... Comp. as gas well 364-50 ft.; killed gas to deepen; coring broken shale 3,661 ft.
Mission Drlg. Co.'s No. 3 Shelly ..... Drlg. sandy shale 3,672 ft.
Mission Drlg. Co.'s No. 2 Fox (workover) ..... Cemented 8¼-in. casing on gas sand 3,638 ft.
Mission Drlg. Co.'s No. 1 Kuykendall ..... Drlg. sandy shale 3,443 ft.
Mission Drlg. Co.'s No. 2 O'Brien ..... Derrick.
Mission Drlg. Co.'s No. 1 Eskridge-Heard ..... Spudded.
Mission Drlg. Co.'s No. 2 Mitchell ..... Drlg. rock 3,913 ft.
Mission Drlg. Co.'s No. 2 Powers ..... Derrick.
Olgufer Oil Co.'s No. 3 Ryalls ..... Rig.
Refugio Oil Corp.'s No. 1 Murphy ..... Sand showing oil 3,653-76 ft.; cemented casing.
Saxet Oil Co.'s No. 1 Serafine ..... Drlg. rock 1,111 ft.
Saxet Oil Co.'s No. 1 Ryals ..... Spudded.
Saxet Oil Co.'s No. 3 Holmes Heard ..... Derrick.
Saxet Oil Co.'s No. 10 Clint Heard ..... Killed well to deepen from sand at 3,682 ft.
Houston Oil Co.'s No. 10 Pratt-Hewitt-Rooke ..... Sand showing oil 3,688-3,703 ft.; cemented 8¼-in. casing 3,691 ft.
Houston Oil Co.'s No. 9 Wilson Heard ..... Rig.
Houston Oil Co.'s No. 2 F. Rooke ..... Comp. gas well 1,275 lbs.; sand 3,670-82 ft.
Houston Oil Co.'s No. 13 F. B. Rooke ..... Comp. flowing 300 bbls. pipe line oil; sand 3,674-82 ft.
Independent Oil & Gas Co.'s No. 1 O'Brien ..... Drlg. sandy shale 5,053-59 ft.
Independent Oil & Gas Co.'s No. 1 Claude Heard ..... Drlg. rock 643 ft.
Independent Oil & Gas Co.'s No. 1 Anna Reilly ..... Drlg. shale 1,834 ft.
Independent Oil & Gas Co.'s No. 1-A J. F. B. Heard ..... Location.
W. L. Pearson, trustee, No. 2 Fox ..... Spudded.
W. L. Pearson, trustee, No. 1 Swift ..... Sand showing oil 3,683-88 ft.; cemented 6⅝-in. casing 3,682 ft.
Sun Oil Co.'s No. 1 Leisering ..... Sand 3,682-86 ft.; cemented 8¼-in. casing 3,670 ft.
Sun Oil Co.'s No. 2 Leisering ..... Drlg. shale 3,374 ft.
Texas Gas Co.'s No. 1 Rogers ..... Killed 1,400 lbs. gas pressure 3,686 ft.; to deepen.
The Texas Company's No. 1 Clint Heard ..... Drlg. sandy shale 2,205 ft.

SOUTH LOUISIANA FIELDS

LOCKPORT—CALCASIEU PARISH

Vacuum & Gulf's No. 3 State ..... Drlg. shale 5,219 ft.

HACKBERRY—CAMERON PARISH

Calcasieu Oil Co.'s No. 4 Lemke ..... Cemented 6⅝-in. casing 3,800 ft.
Calcasieu Oil Co.'s No. 4 Caldwell ..... Drlg. gumbo 3,190 ft.

Calcasieu Oil Co.'s No. 8 Valery ..... Rig.
Rycade Oil Corp. and Humble's No. 2 Gulf Land (workover) ..... Coring 4,159 ft.
Rycade Oil Corp.-Humble Oil & Refg. Co.'s No. 4 Gulf Land ..... Rigging.
Yount Lee Oil Co.'s No. 1-B Lacey, Old Hackberry..... Drlg. rock 2,959 ft.
Yount Lee Oil Co.'s No. 2-B Lacey, Old Hackberry..... Drlg. sand 2,446 ft.
Yount Lee Oil Co.'s No. 2 Carter & Sweeney, Old Hackberry ..... Drlg. gumbo 686 ft.
Sunshine Oil Co.'s No. 4 Ellender ..... Total depth 3,480 ft. in heaving shale; sidetracking 3,000 ft.
Sunshine Oil Co.'s No. 5 Ellender ..... Cemented 6⅝-in. casing 3,140 ft.
J. F. Sutton' No. 1 Duhon (Old Hackberry) ..... Location.

JENNINGS—ACADIA PARISH

Kathleen Oil Co.'s No. 1 Syndicate (workover) ..... Pulling screen to deepen 3,922 ft.
Ratcliff Oil Co.'s No. 7 Martin Producers (workover).... Drlg. 1,736 ft.
The Texas Company's No. 5 Rayne heirs (King tract).... Drlg. 5,300 ft.
Yount Lee Oil Co.'s No. 4 Crowley, northeast flank, Section 48-9s-2w ..... Total depth 8,250 ft. in heaving shale; to plug to sand 7,557-93 ft.
Yount Lee Oil Co.'s No. 5 Crowley, Sec. 48-9s-3w ..... Location.
Yount Lee Oil Co.'s No. 7 Houssiere-Latrielle, Sec. 47-9s-2w ..... Cem. 7-in. casing 7,100 ft.
Yount Lee Oil Co.'s No. 1 E. F. Simms (northwest side).. Drlg. 2,200 ft.

EDGERLY—CALCASIEU PARISH

C. M. Crotty's No. 15 Lillard ..... Set strainer 2,247 ft.
Green Oil Co.'s No. 2 Moore (workover) ..... Drlg. 2,844 ft.
Rex Petroleum Co.'s No. 8 Hunter (workover) ..... Drlg. 3,514 ft.
Rex Petroleum Co.'s No. 10 Hunter (workover) ..... Comp. pumping 300 bbls. fluid 5 per cent oil 4,357 ft.

VINTON—CALCASIEU PARISH

Gulf Refining Co.'s No. 1 J. W. Gardner ..... Drlg. 3,142 ft.
Salt Dome Oil Co.'s No. 2 Shaw ..... Drlg. 3,038 ft.
Vinton Petroleum Co.'s No. 4 Matilda Gray (workover).. Flowing 600 bbls. oil 2,938 ft.
Marrs McLean's No. 4 Gray (workover) ..... Fishing 1,779 ft.

BAYOU BOUILLON—ST. MARTIN PARISH

Rycade Oil Corp.'s No. 7 Bouillion fee ..... Drlg. hard sandy lime rock 4,656 ft.
Rycade Oil Corp.'s No. 3 State (former well) ..... Abandoned 3,673 ft.

STARKS—CALCASIEU PARISH

Gulf Refining Co.'s No. 11 Lutcher-Moore (workover) .. Working over.
Gulf Refining Co.'s No. 12 Industrial ..... Drlg. 2,646 ft.

SWEET LAKE—CAMERON PARISH

Pure Oil Co.'s No. 7 Yount Lee ..... Standing cem. 6,881 ft.
Pure Oil Co.'s No. 9 Yount Lee ..... Derrick.

SORRENTO—ASCENSION PARISH

Gulf Refining Co.'s No. 16 United Land Co... ..... Drlg. 1,847 ft.

MISCELLANEOUS WILDCATS

TEXAS

AUSTIN COUNTY

Kirby Petroleum Co.'s No. 1 Rogers, San Felipe ..... Drg. 2,661 ft.
Whittington et al's No. 1 Lass, 4 miles northwest of Bellville ..... No report.

BRAZORIA COUNTY

Mills Bennett Production Co.'s No. 1 Allen, Allen Dome.. Rig up.
Faust et al's No. 5 Faust ..... Changing rigs; depth 2,000 ft.
Shell Petroleum Corp.'s No. 1 Blakely-Winston, Danbury ..... Rig.
Steel & Strickland's No. 1 Lockridge ..... Rig.

CHAMBERS COUNTY

Chicago Oil Corp.'s No. 1 Lawrence ..... Shut down in gumbo 1,200 ft

FORT BEND COUNTY

Gulf Production Co.'s No. 12 Trone, Long Point ..... Drlg. sand 6,000 ft.

HARRIS COUNTY

Baldwin and associates' No. 1 Kitzman, Cypress ..... Standing 4,055 ft.
Gulf Crest oil Co.'s No. 1 Gulf Crest ..... Drlg. gumbo 2,520 ft.
A. F. Belunek's No. 1 Thompson ..... Rig.
Hammond et al's No. 1 Brodt ..... Gumbo 1,190 ft.; shut down after fire.
Humble Oil & Refg. Co.'s No. 6 Warren Hockley .... Reaming 4,496 ft.
Humble Oil & Refg. Co.'s No. 1 Sidious Maykawa ..... Drill stem test showed salt water and gas 3,394 ft.; total depth 3,453 ft.
Humble Oil & Refg. Co.'s No. 2 Woodburn ..... Cemented casing 1,830 ft.
Rich et al's No. 1 Highlands ..... Derrick.
Torsen et al's No. 1 Stewart ..... Drlg. gumbo 2,210 ft.
Watts Brothers' No. 1 Hubert, Mykawa ..... Rig.
York & Robertson's No. 1 Garrett, Harris & Carpenter Sur. ..... Sandy shale 1,917 ft.; shut down.

JEFFERSON COUNTY

Deep Test Oil Corp.'s No. 1 Faith-McFadden ..... No report.
Gulf Production Co.'s No. 1 Junker, Fannette ..... Set screen to test 4,700 ft.
Gulf Production Co.'s No. 8 Bordages ..... Rig.
Gulf Production Co.'s No. 4 Burrell ..... Rig.
River Oil Corp.'s No. 1 Ship Channel, Brown Survey .... Standing.
The Texas Company's No. 2 Pipkin, Big Hill ..... Drlg. sand and shale 5,165 ft.
The Texas Company's No. 1 Fitzhugh, Big Hill ..... Drlg. hard lime 3,708 ft.
Vacuum Oil Co.'s No. 1 Herbert-Broussard, T.&N.O. Sur. No. 208. ..... Drlg. 5,497 ft.

LIBERTY COUNTY

Gulf Production Co.'s No. 1 Weiser ..... Drlg. 3,656 ft.
Gulf Production Co.'s No. 3 Boyt, Hankamer ..... Drlg. 1,829 ft.
Humble Oil & Refg. Co.'s No. 6 Sterling, Moss Bluff .... Drlg. hard sand and lime 4,666 ft.
Cranfill Reynolds Co.'s No. 1 Vajdak, Sheeks ..... Tested salt water 4,203 ft.; to deepen.
Cranfill Reynolds No. 3-A Esperson, Sheeks ..... Comp. flowing 212 bbls. pipe line oil in 12 hours on half-inch choke; 3,336 ft.

MONTGOMERY COUNTY

Kelley-Baker et al's No. 1 Juerges ..... No report.

ORANGE COUNTY

Galperin et al's No. 1 Mansfield ..... Rigging up.
Gulf Production Co.'s No. 1 J. H. Starks, Port Neches ... Drlg. 3,200 ft.
Gulf Production Co.'s No. 1 M. H. Starks, Port Neches ... Derrick.
The Texas Company's No. 1 Polk, Port Neches ..... Drlg. sand, shale and boulders 2,647 ft.

WALLER COUNTY

Empire Gas & Fuel Co.'s No. 1 Jackson, San Felipe..... Drlg. 425 ft.

SOUTH LOUISIANA

ASCENSION PARISH

Triumph Oil Corp.'s No. 2 Lacey, Sec. 20-10s-4e ..... Shut down 3,327 ft.

ASSUMPTION PARISH

Gulf Refining Co.'s No. 1 Armitese, Napoleonville ..... Rig.

CALCASIEU PARISH

Wilfred LaHay's No. 2 James, Sec. 14-10s-13w ..... Shut down 3,400 ft.
J. O. Davis' No. 1 Mims, Sec. 20-9s-7w ..... Standing 5,600 ft.

CAMERON PARISH

Shell Pet. Corp.'s No. 6 Watkins, Black Bayou ..... Core hard sand 4,826 ft.
Shell Pet. Co.'s No. 12 Watkins, Black Bayou ..... Drlg. rock 5,183 ft.
Shell Pet. Corp.'s No. 13 Watkins, Black Bayou ..... Drlg. calcite and lime 1,247 ft.
Shell Pet. Corp.'s No. 1 Marceaux, Mallard Bay, Sec. 32-12s-3w ..... Drlg. blue shale 2,465 ft.
The Texas Company's No. 4 Calcasieu Lake, Calcasieu Lake Dome ..... No report.
Yount Lee Oil Co.'s No. 1 Starks, Sec. 1-15s-15w ..... Drlg. shale 4,711 ft.

IBERIA PARISH

Gulf Refining Co.'s No. 11 State, Loreauville ..... Rig.
Jefferson Lake Oil Co.'s No. 3 Lake Piegneur ..... Rig.
The Texas Company's No. 4 Vermillion Bay ..... Rig.

IBERVILLE PARISH

Standard Oil Co.'s No. 2 Schwing, Bayou Blue ..... Set strainer 3,584 ft.; flowing but no estimate.
Standard Oil Co.'s No. 3 Schwing, Bayou Blue ..... Derrick.
Standard Oil Co.'s No. 4 Schwing, Bayou Blue ..... Derrick.
Standard Oil Co.'s No. 5 Schwing, Bayou Blue ..... Derrick.

JEFFERSON DAVIS PARISH

Vacuum Oil Co.'s No. 2 DeVilbiss, Roanoke ..... Drlg. gumbo 5,943 ft.
Yount Lee Oil Co.'s No. 1 Courtney, Welsh ..... Spudding.

LA FOURCHE PARISH

Gulf Refining Co.'s No. 25 Stark, Thibodaux ..... Rig.
Gulf Refg. Co.'s No. 1 City of New Orleans, Bay Champagne ..... Rig.
Gulf Refining Co.'s No. 1 Charities, NE Sec. 25-23s-22e.. Moving in rig.

PLAQUEMINE PARISH

Humble Oil & Refg. Co.'s No. 1 Cockrell-Moran, Lake Grand Ecaille ..... Derrick.
The Texas Company's No. 3 Garden Island Bay ..... Derrick.

ST. LANDRY PARISH

Gulf Refining Co.'s No. 2 Gaudet, Port Barre ..... Drlg. 2,520 ft.
Elbof Exploration Co.'s No. 1 Ledoux, Eunice..... Spudded.
Humble Oil & Refining Co.'s No. 1 Lake Washington, Lake Grand Ecaille ..... Drlg. 4,100 ft.
Herbert-Baker Oil Co.'s No. 1 Fisher, Section 10-38-4e... Drlg. 500 ft.

ST. MARTIN PARISH

Bayou Teche Oil Co.'s No. 1 Fournet, Cypress Island..... Rig.
Ohio Oil Co.'s No. 4 Martin, Hager Dome ..... Derrick.
The Texas Company's No. 1 fee, Hager Dome ..... Fishing 5,077 ft.
The Texas Company's No. 2 St. Martin, Hager ..... Drlg. 3,566 ft.
The Texas Company's No. 3 fee, Hager ..... Location.
The Texas Company's No. 4 fee, Hager ..... Location.
The Texas Company's No. 1 Iberville, Hager ..... Drlg. 612 ft.
The Texas Company's No. 2 Iberville, Hager ..... Location.
The Texas Company's No. 3 Iberville, Hager ..... Location.

TANGIPAHOA PARISH

Completion Oil Co.'s No. 1 Amos ..... 2,700 ft., gumbo and shale.
Joan Development Co.'s No. 1 Hilton, Sec. 20-9s-9e ..... Cem. 6⅝-in. casing 3,000 ft.; standing.

TERREBONNE PARISH

The Texas Company's No. 3 State-Bay St. Elaine..... Rig.
The Texas Company's No. 1 La. L. & E. Co., Dog Lake.. No report.
The Texas Company's No. 2 La. L. & E. Co., Dog Lake.. Bldg. derrick.
The Texas Company's No. 2 La. L. & E. Co., Four Isle.. Shut down for repairs; previously reported total depth 3,050 ft.
The Texas Company's No. 1 State—Bay Junop..... No report.
The Texas Company's No. 3 State—Lake Pelto..... Driving piling.
The Texas Company's No. 2 State—Caillou Island..... Driving piling.

SOUTHWEST TEXAS

(Continued from Page 60)

casing to test sand at 1,546 feet. Waiting on cement.

Rockdale Pool—Milam County

Texas Petroleum Development Co.'s No. 1 Milton Phillips, in J. J. Chambers Survey, 600 feet north of No. 14. total depth 3,711 feet, topped Edward lime at 3,614 feet. Drill stem test filled 14 fourbles with sulphur water.

Agua Dulce Pool—Nueces County

Agua Dulce Oil & Gas Co.'s No. 2 Bessie Kerr, Section 36 of Benton Pasture Subdivision, 900 feet to north line and 1,762 feet to west line, set 6⅝-inch casing at 2,025 feet. Waiting to test. No. 1 Ollie Purl, 450 feet to south and west lines of N half Section 6, Ross Peters Subdivision, rigging up.

White Point—San Patricio County

Spencer & Rhodes' No. 2 The Texas Company fee, Lot 6, Ross Subdivision, 150 feet to south and west lines of west 50-acre tract, derrick.

Cole Gas Field—Duval County

Humble Oil & Refining Co.'s No. 35 Kohler, Survey 165, 330 feet to south and east lines, drilling at 350 feet. E. H. Buckner and Sun Oil Co.'s No. 2 Peters, Survey 162, 495 feet to south and west lines, rigging up.

Schoolfield-O'Byrne Pool—Duval

Magnolia Petroleum Co.'s No. 9 Hahl, Survey 250, Block 24, 1,050 feet to east line, 150 feet to south line, drilling at 2,250 feet; No. 2 Lundell, Survey 60, 150 feet to north and east lines of SE of survey, location. Onyx Petroleum Co.'s No. 5 Krauter, Survey 250, Block 20, 150 feet to south and east lines of block, location. G. M. Partee's No. 6 Moody, 510 feet to north line, 150 feet to west line, in sand at 2,355-61 feet. Trapshooter Reilly's No. 2 Hahl, Survey 250, Block 27, 1,050 feet to east line, 150 feet to north line, drilling at 700 feet. S. & O. Corp.'s No. 7 Hahl, Survey 250, 450 feet to south line, 150 feet to west line, derrick. No. 9 Hahl, Survey 250, Block 22, 450 feet to north line, 150 feet to west line, drilling 1,000 feet.

Randado Pool—Jim Hogg County

Randado Oil Corp., Survey 291, Block 2, 150 feet to south line, 450 feet to east line, total depth 100 feet, drilling. Magnolia Petroleum Co.'s No. 1 N. Hinnant, Survey 20, Block 1, 600 feet to north and west lines, drilling 2,174 feet. Magnolia Petroleum Co.'s No. 1 Weil, Survey 5, Block 2, 660 feet to north line, 349 feet to east line, location.

Schott Pool—Webb County

Livingstone & Payne's No. 1 Guerra-Ochoa, Survey 58, 1,371 feet to east line, 470 feet to south line, testing at 1,620 feet. Crown Petroleum Co.'s No. 2 E. Garcia, Survey 463, Block 2, 1,300 feet to east line, 3,350 feet to south line, drilling at 2,274 feet.

Henne-Winch-Farris—Jim Hogg

George S. Marshall's No. 4 Holbien, Survey 11, Share 3, Block 10, 150 feet to south and west lines, derrick; No. 5 Holbien, Survey 15, Share 3, Block 10, 150 feet to north and west lines, rigging up. O. W. Killiam's No. 1 J. G. Martinez, Survey 2, 550 feet to west line, 150 feet to south line, of SE of survey, derrick.

Albercas Pool—Webb County

Rycade Oil Corp.'s No. 10 Yeager-Strohman, Share 5, Las Animas grant, 150 feet south line, 200 feet east line of Rycade's 631-acre tract, location.

Carolina-Texas Pool—Webb County

W. R. Shankle's No. 2 Webster, Survey 684, 1,170 feet west line, 150 feet south line, rigging up.

Mag-Cole Pool—Webb County

Cole Petroleum Co.'s No. 67 Benavides, Survey 412, Block 4, 313 feet east line, 160 feet north line, standing 38 feet. Magnolia Petroleum Co.'s No. 1 Valdez, Survey 754, Block 15, 150 feet south and west lines, derrick. No. 2 J. C. Valdez, Survey 753, Block 2, located 330 feet north line, 660 feet east line, drilling 3,200 feet. No. 1 S. Perez, Survey 460, located 1,980 feet north line, 660 feet west line, drilling. No. 2 King-Harper, Survey 323, Block 2, located 660 feet north and east lines, location. No. 1 D. Benavides, Survey 694, located 660 feet south and east lines, location.

Cole Gas Field

Co-Operative Drilling Co.'s No. 3 Dinn, Survey 454, located 160 feet west line, 450 feet south line, sand at 1,776 feet. Houston Oil Co.'s No. 2-G R. Benavides, Survey 701, located 666 feet south and east lines, location. No. 20-D Benavides, Survey 753, Block 5, located 566 feet north line, 666 feet east line, rigging up. John J. O'Hern's No. 2 Valdez, Survey 754, located 663 feet north line, 667 feet east line, spudded in. O. W. Killam's No. 13 Bruni, sand 2,718 feet testing salt water, reaming. No. 14 Bruni, Block 11, derrick.

Charco Redondo—Zapata

Loyal Oil Co.'s No. 17 Martinez, located 660 feet northeast of No. 10. No. 18 Martinez, location 300 feet northwest of No. 17. No. 19 Martinez, location 300 feet north of No. 15.

Jennings Pool

Blair & Sacklin's No. 2 Trevino, Survey 66, Block 1, located 150 feet west line, 200 feet north line, drilling 725 feet, showing some oil 600-607 feet. Blankenship and others' No. 1 Trevino, Survey 413, located 2,480 feet south and east lines, location. No. 1 Garza, Survey 413, Block 13, located 160 feet north and east lines, drilling at 1,310 feet. Evans and others' No. 1 Trevino, Survey 62, Block 7, located 170 feet north and west lines, drilling at 2,260 feet. O. W. Killam's No. 1 Flores, Survey 240, drilling at 1,260 feet. No. 2 Flores, drilling at 1,501 feet. Killam-Duggan's No. 9 Cuellar, Survey 277, located 3,040 feet east line, 310 feet south line, spudded in. O. W. Killam's No. 17 Cuellar, derrick.

South Texas Production Co.'s No. 1 Roy Jennings, drilling 3,280 feet. No. 6 Joe Jennings, standing at 100 feet waiting on water.

COMPLETIONS

Duval County

Humble Oil & Refining Co.'s No. 36 Kohler, Survey 424, completed 1,814 feet for 15,000,000 feet of gas daily.

Magnolia Petroleum Co.'s No. 1 Lundell, Survey 60, completed 2,326 feet for 15,000,000 feet of gas daily. Magnolia Petroleum Co.'s No. 9 Hahl, Survey 250, Block 24, completed 2,328 feet for 75 bbls.

Guadalupe County

Magnolia Petroleum Co.'s No. 1 R. C. Appling, James Hodges Survey, completed 2,532 feet, estimated 4,000 bbls. daily.

Webb County

Co-operative Drilling Co.'s No. 3 Dinn, Survey 454, completed 1,782 feet for 40,000,000 feet of gas daily.

Nueces County

Agua Dulce Oil & Gas Co.'s No. 2 Sanders, Section 35, completed 1,979 feet, testing 80,000,000 feet of gas.

ABANDONED TESTS

Aransas County

United North & South Development Co.'s No. 1 Kate J. Edwards, William Lewis Survey, Block 30, abandoned, dry 5,587 feet.

Bastrop County

Pacific Oil & Gas Co.'s No. 1 Darnell & Bickler, Martha Barker Survey, abandoned, dry 2,627 feet in Edwards lime.

Bee County

The Texas Company's No. 1 G. C. Rhuman, C. Martinez Survey, abandoned, dry 1,036 feet.

Caldwell County

John T. Callahan and others' No. 1 William Ellison, William House Survey, abandoned, dry 2,750 feet.

Magnolia Petroleum Co.'s No. 2 Merriweather, A. Floyd Survey, abandoned, dry 2,758 feet.

Guadalupe County

Sinclair Oil & Gas Co.'s No. 1 Koepp, W. H. Smith Survey, abandoned, dry 2,131 feet.

Jim Wells County

Magnolia Petroleum Co.'s No. 1 Charles Cook, W. H. Sartain Survey, Block 45, abandoned, dry 4,780 feet.

NEW LOCATIONS

Caldwell County

Humble Oil & Refining Co.'s No. 9 C. F. Dye, Hinds Survey, 300 feet east of No. 1, drilling 500 feet.

DeWitt County

F. P. Zoch's No. 1 Steinman, John Garelli Survey, 976 feet southwest lines, 1,797 feet northwest lines, is location.

Duval County

Humble Oil & Refining Co.'s No. 37 Kohler, Survey 144, 330 feet north line, 495 feet east line, derrick.

Jim Hogg County

Magnolia Petroleum Co.'s No. 2 Martinez, Survey 6, location 660 feet to north and east lines.

Gonzales County

Cranfill & Reynolds' No. 1 F. J. Lang, James Rodney Survey, located 150 feet north line, 450 feet east line, shut down at 1,320 feet.

Guadalupe County

Magnolia Petroleum Co.'s No. 1 C. Zedler, James Hodges Survey, location 150 feet northwest and northeast lines.

Magnolia Petroleum Co.'s No. 1 L. V. Echols, James Hodges Survey, location 150 feet north and southwest lines.

Magnolia Petroleum Co.'s No. 1 Rand Miller, Jerome B. Alexander Survey, location 150 feet to northwest and southwest lines.

Uvalde County

Waldrop & Welch's No. 1 H. S. Benson, Section 31, located 150 feet north line, 1,475 feet west line, has been spudded in.

Zapata County

South Texas Production Co.'s No. 2 Roy Jennings, Cerrito Blanco Grant, drilling 300 feet.

Brooks County

Amos Dinn's No. 3 Garcia-Ramos, Share B-1, Gonzalena Grant, 1,300 feet south line, 2,325 feet west line, spudded in, drilling 500 feet.

LOUISIANA-ARKANSAS

(Continued from Page 58)

tion 21-19-11, Bellevue district, at 1,855-72 feet in a broken formation and has made location for No. 2 in the same quarter section. It was the second hole on this location and while shallow in footage, is deep structurally as it is far down on the Bellevue Dome, a mile and a half or so southwest of production. It may lead to further deeper drilling in that locality. Arkansas-Louisiana Pipe Line Co. completed No. 6 Van Hoose, Section 36-16-12, as a 6,000,000-foot gasser at 2,440 feet. Louisiana Gas & Fuel Co.'s No. 3 Skannal, Section 14-17-12, made 2,000,000 feet initial from 877 feet and the Palmer Corp.'s No. 1 Johnson, NE NE, Section 24-17-12, gauged 22,885,000 feet of gas from 887 feet. Both the latter are in the Sligo division of Elm Grove which many regard as a separate field. And development there, however, must be accomplished quickly as the establishment of an Army flying field occupying 22,000 acres immediately adjoining precludes development after 1930.

Such progress as was made in DeSoto Parish wells was only of a routine nature except in the case of R. O. Roy's No. 1 Betty Rogers, Section 13-13-14, which he abandoned as a dry hole at 3,015 feet, the third of a series of three tests one of which was a small gasser. Tunica Petroleum Co. added another to its string of small pumpers in the White Sulphur district of LaSalle Parish, 20 miles southeast of Urania when No. 50 L. & A. went on the beam for 15 bbls initial from 8 feet of sand, total depth 814 feet.

Franklin Oil & Gas Co. in which Florsheim, Simmons and Trousdale, Monroe gas interests have a very large part, have taken 14,000 acres centering on Section 29-15-9, Franklin Parish, and are rigging up to drill No. 1 T. J. O'Brien in the SW NW, Section 17-15-9, to 3,000 feet and it is reported that the acreage around Lochnager Oil & Gas Co.'s No. 1 Taliaferro, Section 26-9-6, Catahoula Parish, is being reblocked with the idea of holding the leases for deepening that wildcat which has been shut down at 900 feet for the last year.

Drilling for Gas

Ouachita Parish division of the Monroe gas field was the location of three new gassers: Magnolia Petroleum Co.'s No. 3 Fee 404, Section 11-19-5, gauged 2,700,000 feet at 750 pounds rock pressure, total depth 2,311 feet; Chauvin Gas Co.'s No. 1 West Virginia, Section 8-8-4, made 3,120,000 feet, total depth 2,195 feet, 1,025 pounds rock pressure, and Imperial Oil & Gas Products Co.'s No. 10 Stubbs, Section 12-19-3, made 4,068,000 feet at 900 pounds rock pressure, total depth 2,194 feet. Chauvin Gas Co. immediately made location for four more tests in Sections 47 and 49-18-4 on the Slagle Johnson land.

There were numerous new locations, etc., in the Richland gas district, but only two completions: Feazel, Bendel & Brown's No. 1 J. H. Hemler in Section 23-16-6 gauged 50,076,000 feet, total depth 2,444 feet and Southern Carbon Co.'s No. 1 Bijion & Sartor, Section 21-17-6, in the northern belt where most recent development has been located, made 1,440,000 feet, 780 pounds rock pressure, 2,468 feet, Standard Alto district depth. Location is a quarter-mile from one well that gauged better than 50,000,000 feet and three-quarters of a mile from another that made a like amount on completion in the same stuff.

Magnolia Petroleum Co.'s deep test in the southwest corner of the field, No. 2 Margie Hatch, Section 2-15-5, surrounded by edge wells some of which are paying off and others are failures, appears to be one of the latter. It tested 103 joints of salt water at 2,700 feet and the last report on it was that it had the same luck at 2,858 feet and was going deeper. This is about as deep as any well in this part of the field has gone and much deeper than any production has been obtained in that part of the area. Probably Magnolia is hunting for the same stuff that gave Hope Production Co. its deep gasser (around 2,900 feet) in the opposite, northeastern corner of the field in the Trinity series.

Of all the deep wells that have been drilled in Richland, however, the Palmer Corp.'s No. 4 Rhymes, NE NW, Section 28-17-6, in the northern belt, is the deepest. So far as scout reports go, it hasn't had a show of anything, gas, oil or salt water, the former expected, the second not hoped for and the third feared, and it is down 3,045 feet. Hope Production Co.'s well, No. 1 Eubanks, Section 26-17-6, did 7,653,000 feet from 2,942 feet under 1,260 pounds rock pressure. Industrial Gas Co.'s No. 1 Jenny, Section 6-20-4, Union Parish angle of the Monroe Field, made 12,852,000 feet at 970 pounds rock pressure in completion at 2,182 feet.

Magnolia Petroleum Co.'s deep Trinity test in the Cotton Valley district of Webster Parish, No. 1 McCook & Hibbler, Section 2-21-10, is still an unknown quantity. With 9 feet of saturated sand at the bottom, total depth 6,949 feet, it ran into a smashed joint of 8⅛-inch pipe at around 3,600 feet, in trying to set a string of 5⅜-inch, swedged past that and ran into another collapsed joint at 3,950 feet. If they get by that there will be another highly interesting deep test in north Louisiana. Louisiana Oil Refining Corp.'s No. 6 Gray, a deep test in Section 28-21-10, Cotton Valley, had sand from 4,654-58 feet and finished gauging 30,700,000 feet of rich gas.

Arkansas Developments

Little development news came out of Arkansas though there are quite some few completions. Pine Prairie Oil Co.'s No. 1 Carter, carried on the report for the last two or three years, finally was dropped as a dry hole at 2,176 feet. Location is in Section 33-10-6 and a few weeks ago there was a rumor that other interests were figuring on taking it over and going deeper, but that's the last of it so far.

Grotte and others' No. 1 Allen, Section 31-12-31, Little River County, is abandoned, junked a 2,941 feet.

B. F. Foster's No. 1 Purph, a new well in Smackover, Section 35-15-16, Ouachita County, pumped 30 bbls. 50 per cent water, from 2,042 feet. Houston Oil Co. abandoned No. 1-B Wilson in Section 25-15-18, Mount Holly district, at 3,024 feet, both the shallow and deep sands failing to make a commercial well. E. M. Jones' No. 2 Murphy, Section 2-16-15, Ouachita (Smackover) was a salt water hole at 2,042 feet and J. E. Reynolds' No. 2 Fee, Section 27-15-15, pumped 20 bbls., total depth 2,043 feet. Louisiana Oil Refining Corp. decided not to deepen No. 1 Haltom, Section 15-15-19, Stephens district, but is carrying on with No. 1 Green, Section 22-15-19, coring at 2,265 feet. Simms Oil Co. made a 60-bbl. pumper of No. 3 E. Johnson, Section 34-15-15, at 1,985 feet and Skelly Oil Co.'s No. 4 Woods, Section 34-15-15, did 103 bbls. clean oil in the first 9 hours from 13 feet of sand, total depth 2,029 feet. Timberlake and others' wildcat north of Camden, Ouachita County, was written off as a dry hole at 2,900 feet. No. 1 Cranmer, SE NE, Section 26-04-18. E. L. Chapman's No. 2 Purifoy, Section 2-16-16, Union County, was junked and abandoned at 2,562 feet.

East Texas' sole completion during the week was Nemours Corp.'s No. 5 G. C. Tiller, W. D. Matthews Survey in Panola County, making 1,000,000 feet of gas, total depth 2,338 feet.

Pipe Line Runs

Daily average runs from the field dropped 2,100 bbls. from last week's 104,255 bbls.

NORTH LOUISIANA

Caddo, light	12,480
Caddo, heavy	3,040
Homer	3,765
Haynesville	4,805
DeSoto-Red River	3,175
Elm Grove	540
Bellevue	645
Cotton Valley	2,510
Urania	5,785
Pleasant Hill	1,020
Sarepta	450
Total	38,215

ARKANSAS

ElDorado	4,360
Smackover, light	5,810
Smackover, heavy	42,215
Stephens	1,000
Nevada	1,040
Lisbon	1,180
Champagnolle	5,230
Bradley	85
Total	63,920
Both states	102,135
Last week	104,255
Decrease	2,120

CANADIAN FIELDS

(Continued from Page 62)

was frozen off rather than becoming exhausted. The annual production of Royalite's No. 4 reached its highest figure in 1927, with 1928 showing a small decline. No official statement has been given out by Imperial Oil, Ltd. regarding the present status of the well.

Dalhousie Oil Co.'s No. 1, LSD 4, Section 18-20-2w5, is rigging up to clean out and deepen the hole in an effort to restore production. The hole got deep lime production at 4,565 feet, making a maximum of around 250 bbls.; but has been frozen off most of the time, coming back into production for short intervals. Freezing is thought due to the looseness of the formation and the small size of the hole.

In the central Turner Valley, Calmont Oils' No. 1, LSD 2, Section 1-20-3w5, is at 5,557 feet and pulling 4½-inch casing. This test has some wet gas production in the lime but has experienced a lot of trouble getting to the main producing horizon. McLeod Oil Co.'s No. 1, LSD 16, same section, lost tools in the lime at 3,953 feet. McLeod's No. 4, same LSD, producing from the lower horizon 1,593 feet in the lime, is reported to have increased its production from 120 to 140 bbls.

Widney Petroleums' No. 1, LSD 11, Section 12-20-3w5, has encountered more 53 gravity crude in a second horizon of the McDougall sands at 3,236 feet and is estimated good for 75 bbls. The test will likely be drilled to the Dalhousie sand in hope of encountering gas sufficient to flow this crude.

South Turner Valley

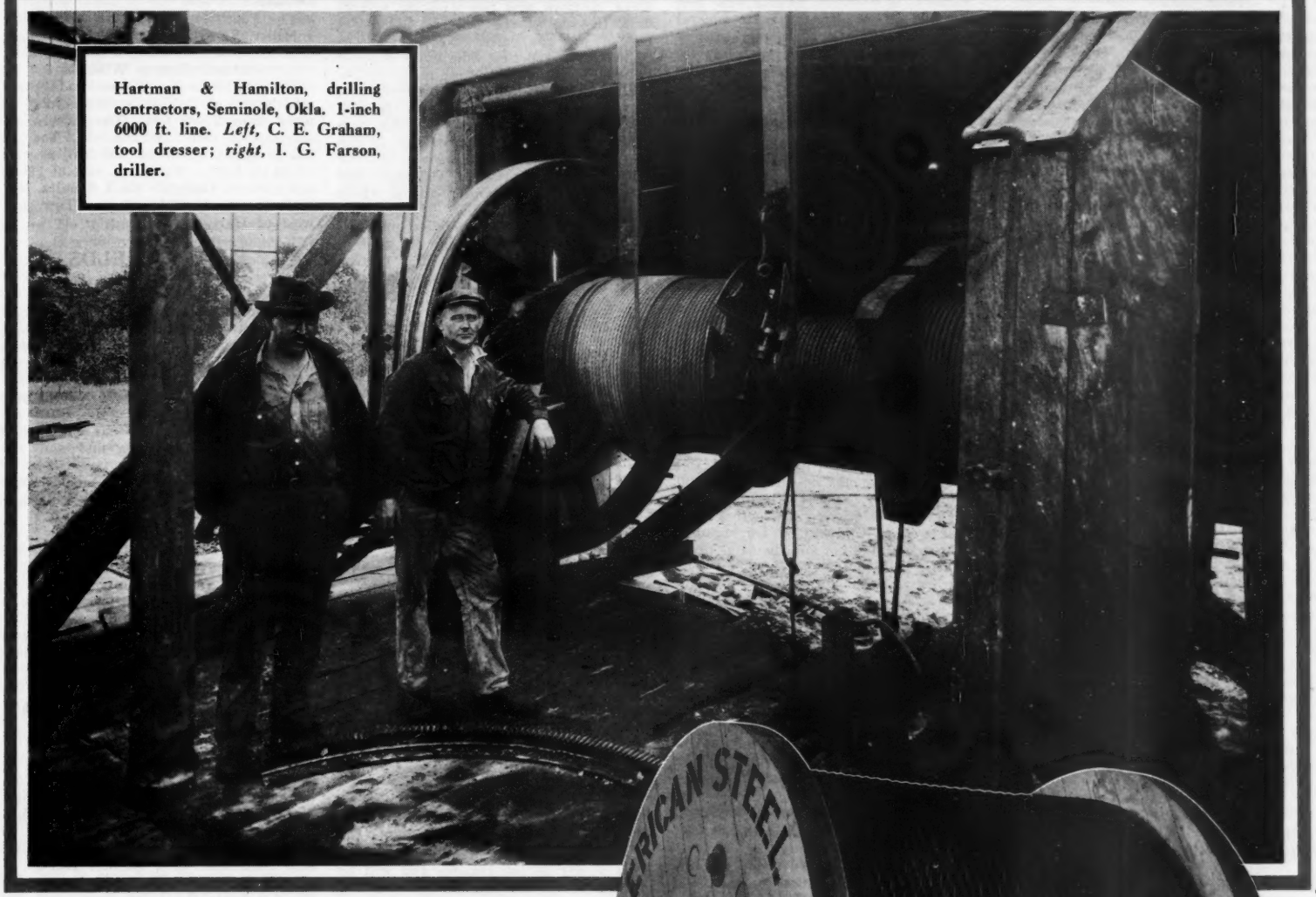
In the south Turner Valley, East Crest Oil Co.'s No. 1, LSD 5-6, Section 16-19-2w5, is erecting new derrick and will install rotary to drill into the lime, where casing is cemented at 4,322 feet.

Two new tests are being started by Calmont Oils on the Dallas lease in LSD 11. Of these, No. 8 has derrick up just west of No. 2 and close to the Home Oil Co. producers; and No. 10 has location offsetting Baltac's No. 1, which is northwest of the Home wells. This will give the Calmont company a total of 10 wells of its own in the Turner Valley, in addition to tests being drilled for Dalfin Petroleums and Vanalta Oils. The Calmont company has also undertaken to drill on acreage in the Border fields near Lethbridge.

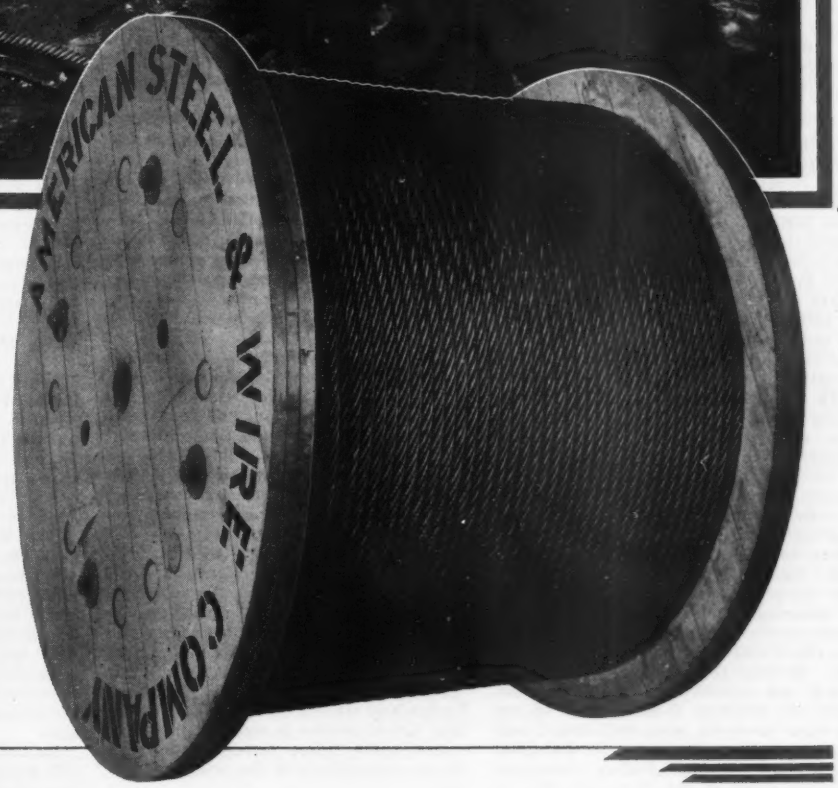
Mercury Oils' No. 1, LSD 13, Section 4-19-2w5, is drilling close to the Kootenays at 3,880 feet, close to the horizon at which the old Record well, in the same section, got strong showings of light crude. Mill City Petroleums' No. 1, rotary test, LSD 14, same section, is reported drilling below 1,325 feet, after making 800 feet in less than five days. Test is being made under a "bottom hole" contract requiring that it be drilled and casing cemented at least 5 feet in the lime. Mill City Petroleums, Ltd., is planning to drill two additional tests in the same section. Spray Oils' No. 1, LSD 9, Section 5-19-2w5, is drilling in the lower Bentons at 1,925 feet, after encountering a small show of crude around 1,800 feet. Merland Oils' No. 1, Section 27-18-2w5, is drilling in the Home sands below 4,100 feet after getting shows of oil and gas at 4,098 feet. Commonwealth Petroleums' No. 2, LSD 7, Section 9-19-2w5, is drilling close to the lime at 4,053 feet, after encountering a fair production of light crude in the Dalhousie sands.

Alberta Superior Oils' No. 1, LSD 5, Section 21-19-2w5, is reported spudding in. Freeman Lundy Syndicate is reported working on derrick for its No. 2 in LSD 5, Section 3-19-2w5. Calina Oils, Ltd., a

AMERICAN WIRE LINES



Hartman & Hamilton, drilling contractors, Seminole, Okla. 1-inch 6000 ft. line. *Left,* C. E. Graham, tool dresser; *right,* I. G. Farson, driller.



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Supply Company

new company backed by Calgary and Regina capital, is reported preparing to drill on acreage in the South Turner Valley. Wainwright-West Co., which has a location on a 1,100-acre tract in the Wainwright Field, is reported negotiating for acreage in the Turner Valley Field.

North Turner Valley

In Turner Valley north, Cartier Oils' No. 1, LSD 10, Section 5-20-3w5, is reported rigging up. Shasta Oils' No. 1, LSD 4, Section 35-19-3w5, is working on derrick. Spooner's No. 1, Section 24-20-3w5, is rigging up for a shot in the lime to restore production.

Model Oils' No. 1, LSD 8, Section 22-20-3w5, got the Dalhousie sands at 5,365 feet and is underreaming to carry 10-inch casing to the bottom. This test previously got strong show of light crude, supposed to have come from the Dalhousie sands through a fault, and commercial production was looked for in the Dalhousie. Casing will be cemented before drilling into the producing horizon, but the test will likely be drilled through to the lime, around 5,600 feet.

Invader Oils' No. 1, LSD 10, Section 9-21-3w5, is drilling in the Dakotas around 3,125 feet. Two additional shows of crude were met, one on top of the Dakotas at 2,915 and another at 3,120 feet. The 12½-inch has been carried to 2,440 feet. Weymarn Petroleums' New Black Diamond No. 1,LSD 1, Section 3-20-3w5, is drilling at 2,860 feet after cementing caving. P. Von Weymarn, president and managing director, left for Norway recently to confer with the backers of the company there, but will return to Canada the last of November.

In the Highwood-Sinclair area, Northwest-C. & E.'s No. 1 is rigging up. Hudson's Bay-Marland Oil Co.'s No. 1, Section 8-18-3w5, is making new hole after drilling out cement at 850 feet. A quarter mile north of the Prince of Wales' ranch, Western Alberta Oil Co.'s Nordon No. 1, LSD 11, Section 7-17-2w5, is drilling in the Kootenays at 1,650 feet, after getting a show of gas at 1,605 feet. Bonanza Oils' No. 1 has location in LSD 4, Section 14-19-3w5, and is starting on derrick.

Waite Valley

In the Waite Valley area, the Richfield Petroleums' No. 1, Section 35-20-3w5 is drilling around 2,800 feet with shows of oil reported in the Benton shales. Sharron Oils' No. 1, LSD 7, Section 5-20-3w5, is rigged up and drilling water well. Anglo-Pacific Oils' No. 1, LSD 4, Section 27-19-3w5, had derrick up.

On the Moose Dome, Moose Oils' No. 1, LSD 16, Section 29-22-6w5, is drilling in the Devonian lime at 750 feet with a gas flow estimated between 500,000 and 1,000,000 feet a day.

In the Pincher Creek district, Waymarn Petroleum's No. 2 has built road, dug cellar, and is moving in derrick timbers.

In the Red Coulee Field, west of Coutts, Vanalta Oils' No. 1, SW Section 4-1-16w4, is reported gradually increasing its production and is expected to make 100 bbls. when it has cleaned itself. Vanalta's No. 2, 440 feet west of the discovery well, has cellar dug and is reported starting on derrick. It is understood two more tests will be drilled by the Vanalta company on this acreage. Ko-Top Oils' No. 1, Section 2-1-17w4, has spudded in with standard tools. It is about 3 miles west of the Vanalta producer, and the second test to start drilling. Caledonia Oil Co.'s No. 1, LSD 10, Section 6-1-16w4, is located 2 miles west of the Vanalta's No. 1. South of the Montana boundary, Monalta Oil Co.'s No. 2 on the Blarney Castle Dome west of Sweetgrass has resumed drilling after setting 8¼-inch casing. Production of the Vanalta well is being trucked to the Maple Leaf refinery at Coutts.

Skiff Field

In the Skiff Field, Dauntless Oil's No. 1, LSD 9, Section 36-6-15w4, is running casing preparatory to a production test. Light crude is reported to show in the cores encountered in the Sunburst sand at 3,024 feet, and there is a second show in the Ellis at 3,260 feet, apparently heavier crude.

A Winnipeg syndicate is reported starting work in Section 14-3-11w4; water well has been sunk and derrick erected.

In the Campion district, Hudson's Bay-Marland Oil Co.'s No. 1, LSD 2, Section 9-16-23w4, is reported making new hole below 2,750 feet. In the same general area, Nordon Oil Corp. is core drilling on the McIntyre ranch, preparatory to location of a possible commercial test by other interests which will develop the acreage on a royalty basis. A test was started in this area some years ago by D. A. McDonald and associates of Vancouver, but was never finished.

In the Taber district, Cole-English Syndicate's Taber No. 1, SW Section 11-10-17w4, is reported drilling in a hard formation below 850 feet, after cementing 12½-inch casing at 820, to shut off artesian water. Some gas was struck at 580 feet. The syndicate is reported leasing additional acreage. Campbell M. Hunter, in charge of operations, has left for England and may visit Rumania before returning to Canada. Wallace McMullen is in charge in his absence.

Test for Gas

In the Raymond district, southern Alberta, the Hutterite Colony on the Knight's Buck ranch is drilling a test for natural gas. The 6-inch hole is down 100 feet and production is looked for at 750 feet, but the test may be carried to 2,000 feet if necessary. The Hutterite Colony at New Dayton secured production in a similar well at 680 feet, which supplies the entire community; and the same drilling outfit is used for the Raymond test. The work is done by members of the colony, working in three-hour shifts.

In the Suffield district, the Ontario-Alberta Oil Corp.'s No. 1, Township 17-8w4, is being drilled deeper after encountering some oil showings.

Devonshire Oils, Ltd. of Calgary has secured 12,000 acres of leases in various parts of Alberta, including acreage in the South Turner Valley Field, and on the Black Diamond, Jumping Pound, Waite Valley, Highwood-Sinclair and Blood Reserve structures.

In the vicinity of Castor, Young Petroleums, Ltd. has located No. 1 test a half mile north of the town.

Striking of shallow gas production at 92 feet depth in a water well on the Jack Gray farm northwest of Calgary has been followed by extensive leasing in the vicinity. The gas was struck in a limestone formation, and limestone outcroppings occur over a considerable area in the vicinity. Several shallow tests will likely be drilled.

As a result of a recent arrangement with the Canadian Exploration Co. of Denver, Alberta Pacific Consolidated Oil Ltd. of Calgary will in 1930 undertake a series of five tests on five different structures in Alberta. Alberta Pacific Consolidated's No. 1 test will be started next spring on the Duvernay structure north of Vegreville. It is a comparatively shallow structure, and the test will cost approximately $40,000 to drill. No. 2 will be located on the Cardinal structure just west of Sundre. No. 3 will be on one of the unnamed structures in southern Alberta. These three tests will be started in the spring; and two additional tests by August, 1930.

In southeastern British Columbia, Crow's Nest-Glacier Oil Co.'s No. 1 in the Sage Creek district is reported installing a new cable before finishing the well, which is apparently in the producing horizon.

In the Akamina Valley, close to Waterton Lakes Park, Akamina Valley Oil Co. of Vancouver is constructing camp and has let contract for No. 1 well to a Shelby, Mont., firm which is moving in machinery and casing and will spud in this fall. A Toronto syndicate has leased part of the Akamina company's holdings and may start one or two tests this winter.

In Essex County, Ontario, a small flow of natural gas was struck near Tecumseh in a water well test near the Drouillard & La Bute property. Production was encountered at 100 feet depth.

CALIFORNIA FIELDS

(Continued from Page 57)

months ago as a duster but during the course of work confirmed the opinion of company geologists that this antecline justified further work. This project, it will be recalled, get beyond control at one stage of work and ran wild for several days flowing at the rate of 50,000,000 feet of wet gas daily. No oil was encountered in the first hole but a definite oil sand has been definitely cored in No. 2 Hollister at 3,156 feet. An early test will be made on this well and the outlook is exceptionally promising for production. No. 1 Ladd, a wildcat of the Petroleum Securities, located in the Guijarral Hills between Coalinga and Kettleman Hills, is another wildcat which commanded the attention of operators during the week. Core samples indicated the existence of a promising oil sand in this project at 6,542 feet and further work will be watched with interest.

MICHIGAN FIELDS

(Continued from Page 56)

Pure Oil Co. had only one new completion, No. 2 L. J. Thompson, NW NW, Section 12-14-3. It made 70 bbls. a day initial in the Dundee.

Four new locations were made and permits obtained by two companies. The Dixie Oil Co.'s new wells will be No. 1 N. Davis, SE SE SW, Section 2-14-3, Chippewa Township, Isabella County, and No. 1 M. Trussell, SW SW SW, Section 2-14-3. The Gordon Oil Co. made location for No. 1 Isabella State Bank, NW SE SE, Section 8-15-3, Denver Township, Isabella County, and No. 1 Hughes Berry, NE NW NW, Section 11-14-3, Chippewa Township, Isabella County.

Cass County

V. M. Voorhees, Muskegon contractor, is moving a rig to a new location in Cass County for Blair & Miller on No. 1 Stuttman, NE NW, Section 32-7s-13w, Porter Township. Blair & Miller drilled a dry hole on the Frank Knowlton farm in Cass County.

Sullivan Wildcat Dry

One of the three wildcats drilling recently in Muskegon County outside the proven Muskegon and Laketon Township areas is dry in the Dundee and will be plugged. It is the Herman Hanson Oil Syndicate's No. 1 Foot, NE NE Section 8-9-15, Sullivan Township, 15 miles southeast of the proven Muskegon Field, one of two wells drilling in that part of the county. A show of oil and gas was struck in the Dundee at 2,280 but salt water immediately followed.

F. J. Johnston's No. 1 Johnston-Marston-Janicke, SW NW Section 1-9-15, the other Sullivan Township wildcat, has reached 2,175 feet and is expecting to top the Dundee limestone within another 50 feet or less. Both wells had slight shows in the Traverse and operators were hoping a new Muskegon County Pool might be found.

The Michigan Petroleum Co.'s No. 1 C. E. Moe, SE SE Section 6-9-13, Chester Township, Ottawa County, about 2 miles east of Ravenna, is reported drilling at between 4,300 and 4,400 feet after having encountered more than 200 feet of rock salt in the Salina formation. No large shows of oil or gas have been encountered, although the well is one of the deepest ever drilled in western Michigan.

Buchanan & Frye's No. 1 Fruitvale, SW SE Section 6-12-16, Blue Lake Township, near Rochdale Inn, is drilling at about 1,700 feet and expecting to reach the upper Traverse within another 100 feet.

Ottawa County Wildcats

A sixth Ottawa County wildcat had all indications of being dry in the Dundee formation, as it was drilling at about 2,100 feet, or more than 100 feet below the point at which possible production was expected. The well is the Dixie Oil Co.'s No. 1 G. H. Telder, SW SW Section 35-6-15, Olive Township.

Newaygo County

Uhl & Sarver's No. 1 David E. Uhl, NW SE Section 20-13-12, Everett Township, Newaygo County, is being temporarily plugged after an unsuccessful shot in the Dundee at 3,090 feet, total depth of 3,565 feet.

The Hervey Syndicate's No. 1 Orville E. Atwood, NE NE Section 31-12-13, Garfield Township, will be drilled to the Dundee.

The Pennsylvania Oil & Gas Co.'s No. 1 Miller, SE SE Section 34-14-11, Goodwell Township, is about 1,600 feet deep.

Oceana County Wildcats

Four wildcats in Oceana County are shut down or fishing at from 2,230 to more than 2,800 feet. Two others are starting to drill: Charles W. Teater's No. 1 Stewart Ranch, NE NW Section 11-16-15, Colfax Township, east of Hart; and Edward DuVall's No. 1 Schultz, NW NW Section 12-15-18, Golden Township, west of Hart.

KANSAS FIELDS

(Continued from Page 52)

and others' No. 1 Johndro, NE cor. SW SE SW Section 15-26-2, Greenwich Pool, is drilling at 815 feet. Shell Petroleum Corp.'s No. 1 Southwestern, SW cor. SE SW, Section 2-27-1w, is rigging up. No. 1 Schwertner, NE cor. NW NW Section 11-27-1w, is rigging up. McCulloch Oil Co.'s No. 1 Buckles, NW cor. SE Section 3-28-1w, has skidded rig and now rigging up.

Keller & Lewis' No. 1 Buckles, NW cor. SE Section 3-28-1w, is dry and abandoned at 855 feet.

Reno County

Gypsy Oil Co.'s No. 1 Hudson, C SE NE Section 27-24-10w, is rigging up.

Sumner County

Lee Payne made location for No. 1 Frederick, NE cor. SW SE Section 12-31-2. Tidal Oil Co.'s No. 1 McCutcheon, SW cor. Section 33-34-2, is dry and abandoned at 3,836 feet.

ROCKY MOUNTAIN AREA

(Continued from Page 62)

ging up. The Continental Oil Co.'s No. 1 State, NW cor. Lot 12, Section 1-21-33, has completed water well at 1,008 feet and is about ready to commence spudding. The Texas Production Co.'s No. 1-B State, 2,311 feet from north line and 330 feet from west line, Section 1-21-33, is rigging up cable tools. Same company's No. 1-A State, 2,311 feet from north line and 330 feet from east line, Section 2-21-33, spudded on October 16, and its No. No. 2-A State, 660 feet to the west of No. 1-A, is rigging up cable tools. The Empire Gas & Fuel Co.'s No. 3-B State, SW NE SE, Section 5-21-35, is drilling at 3,416 feet. C. E. Reynolds and others' No. 1 Merchant, SE cor. NE, Section 15-22-34, had 3,000 feet of water in the hole at 4,045-52 feet and is plugging to abandon. The elevation of this well is 3,905 feet. The salt was cut at 1,845-3,520 feet.

Jal District

In the Jal district in Lea County, the Empire Gas & Fuel Co.'s No. 1 Lindley, C NE SE, Section 14-25-36, is rigging up, and the Humble Oil & Refining Co.'s No. 2-A Lindley, C SW SW, Section 13-25-36, is rigging up. The Magnolia Petroleum Co.'s No. 1 Lindley, SE cor. NE, Section 26-25-36, is drilling by pipe at 2,800 feet, and Cranfill & Reynolds' No. 1 Cushing, SW SE NW, Section 23-24-36, is drilling at 1,665 feet in salt. The top of the salt was at 1,262 feet.

In the Eunice district in Lea County the Gypsy Oil Co.'s No. 1 Mattern, SW cor. SE, Section 24-21-36, is plugging back at 3,865 feet from 4,150 feet to a gas and oil show which will be tested. The Empire Gas & Fuel Co.'s No. 1 Closson, NE NW SE, Section 6-22-36, cemented the 6⅝-inch at 3,577 feet with 250 sacks. Total depth is 3,590 feet. The Penn Oil Co.'s No. 1 State, NE Section 21-19-36, cemented the 8¼-inch at 3,449 feet in anhydrite. The Continental Oil Co.'s No. 1 William Meyer, SW cor. NW, Section 28-22-36, is drilling at 3,406 feet, and its No. 1 A. E. Meyer, NE SW SW, Section 17-21-36, is drilling at 3,350 feet. Buell & Hagen's No. 1 State, C NE, Sec-

tion 33-11-35, Tatum district, is drilling at 4,130 feet in anhydrite, and the Barnsdall Oil Corp.'s No. 1 Bronson, SE cor. Section 28-16-38, Lovington district, is drilling at 395 feet in red rock.

The Maljamar Oil & Gas Co.'s No. 2 Baish, NE cor. SW, Section 21-17-32, Caprock district, is drilling at 4,015 feet. It topped a pay in the lime at 4,002 feet which flowed by heads making 50 bbls. in 25 minutes. Four hours later it made 15 bbls. in seven minutes. Altogether, it made about 90 bbls. a day. Another pay is expected at 4,108 feet. The Rector Oil Co.'s No. 1 King, NE NE, Section 26-25-32, which has been held up for some time at 3,230 feet with the tools in the hole, will cement the hole and drill by the tools.

Eddy County

In Eddy County, V. P. Welch and others' No. 1 State, SW cor., Section 27-17-28, is a location. The Grayburg Oil Co.'s No. 2 Keely, C SE NE, Section 24-17-29, West Maljamar district, is drilling at 2,790 feet in gray lime, and Naylor and others' No. 2 Danciger, NW cor. SW, Section 18-17-31, is drilling at 1,535 feet in red rock and anhydrite. Etz Brothers' No. 1 Etz, C SE SE, Section 13-16-30, is drilling out plug after cementing the 8¼-inch at 2,435 feet, and Leonard & Levers' No. 1 Levers, NW cor. SE, Section 21-17-29, is drilling at 1,650 feet in anhydrite and brown lime. Lockhart and others' No. 1 Parke, SE cor. Section 10-17-30, is drilling at 2,820 feet in gray lime, and the Lockhart Oil Co.'s No. 1 McAllister, C NW Section 23-26-30, is drilling at 1,640 feet in salt and shale.

In San Miguel County, Benedict & Wilson's No. 2, SW cor. NW, Section 25-17n-16, Chapelle district, is spudding in a test three-fourths of a mile west of a well it abandoned recently. In Torrance County H. L. Williams and others' No. 1 State, NE cor. Section 16-8n-10, is drilling at 1,075 feet. In De Baca County, the Transcontinental Oil Co.'s No. 1 McWhorter, SW NW, Section 6-3s-22, is drilling at 4,655 feet in sandy shale, and the Cactus Petroleum Co.'s No. 1 State, SE cor. Section 14-10-26, Chaves County, is drilling at 1,420 feet in lime and gypsum.

The New Mexico Public Service Co. has entered an agreement with A. C. Kittell to run a transmission line to the Bloomfield area in San Juan County to supply electricity for pumping wells in that pool.

UTAH

The test to be drilled on the Butler Dome in Kane County, southern Utah, by the Midwest Refining Co. for the Utah Oil Refining Co. is expected to be under way shortly. Road construction is nearing completion and the moving of equipment to location is in progress. The well will be known as No. 31 and is on unsurveyed land but approximately in the SW cor. SE Section 14-39s-1w, 18 miles southeast of the town of Cannonville, 65 miles east of the Virgin Field in Washington County, where there is some shallow production, and 50 miles southwest of the Circle Cliffs Dome in Garfield County upon which the Ohio Oil Co. drilled a well in 1921. The formations of Pennsylvanian Age will be explored. The first objective, the Shinarump, is expected at 2,500 to 2,700 feet. There are about 15,000 acres on the structure held by the Mountain States Oil Co., the Equity Oil Co., and others, all controlled by the Utah Oil Refining Co. The Midwest will be in charge of the drilling.

The Continental Oil Co.'s No. 1 Boundary Butte, Section 22-43-22, San Juan County, is still idle at a depth of 5,570 feet waiting for casing. The Maude Ellen Oil Co.'s No. 1, Section 28-3s-21, Neal Dome, Uinta County, is drilling at 1,730 feet in the Park City formation, and the Diamond Oil Co.'s No. 4, Section 16-8-5e, Utah County, is running casing at 1,220 feet for a water shutoff. A show of gas and oil was reported at 1,150 feet.

COLORADO

The Mountain Fuel Supply Co., the producing unit of the Western Public Service Co., the concern supply central Utah with natural gas from Wyoming and Colorado, has made several locations in northern Moffat County, Colorado, and probably will be as active in that district during the next few months as it is on the Wyoming side where it has a number of wells drilling. One of these locations is for its No. 1 Lasher, NW NE NE, Section 25-12n-101, in the Hiawatha district, on the Bartram Dome, a local high where the Texas Production Co.'s No. 1 Berlin recently went through a formation making 50,000,000 feet of gas. It has been spotted approximately a mile to the southwest of No. 1 Berlin. Another location is for its No. 1 Wheeler, SE NW NW, Section 30-12n-100, three-fourths of a mile to the southwest of the Texas Production Co.'s well. It probably will be several months before drilling is actually under way. The Mountain Fuel Supply Co.'s No. 2 Florence Wilson, C NE NE, Section 22-12n-100, is building rig. This location is one-fourth mile northeast of No. 1 Wilson, the discovery well on the Hiawatha Dome, which was drilled in as a 58,000,000-foot gasser by William Meyer and associates, in 1926, and half a mile north of No. 1 Kukendall, a gasser. Another location is No. 2 State, 2,330 feet from north line and 200 feet from east line of Tract 37-12n-100. This is approximately the SE cor., Section 16 under the old surveys and the well is near No. 1 State-Reiter-Foster which ran out of hole and was completed at 3,585 feet as a small gas well. Another operation of this company is its No. 1 Musser, C NE, Section 5-11n-97, on the Powder Wash structure to the southeast of the Hiawatha Dome, which is ready to spud. The Texas Production Co.'s No. 1 Berlin, SW SW NE, Section 19-12n-100, Bartram Dome, which killed a flow of 50,000,000 feet of gas to go deeper, is bottomed at 1,880 feet and underreaming to lower the 8⅝-inch casing which is being carried at 1,869 feet. The only active operation on the Iles Dome in Moffat County is Thomas McLaughlin and others' No. 1 Williams, NW SW, Section 2-3n-92, which is drilling at 4,236 feet after cementing the 4¾-inch at 4,232 feet.

Berthoud Dome

The first shipment of oil from the Berthoud Dome in Larimer County was made the past week when the Five Square Oil & Gas Co. loaded two tank cars at Berthoud with crude trucked from its No. 1-A State, SW cor., Section 16-4n-69. The oil goes to the Continental Oil Co. at Florence. The well has been standing for several months at a total depth of 3,781 feet without any reliable test of production having been made as far as known. A string of 2-inch tubing was run, but it paraffined up so badly it was pulled. The well flows by heads and makes from 25 to 35 bbls. a day. The pressure comes from a gas horizon just above the oil. A packer was set above the gas and it is presumed that the oil is forced out when it rises up to the gas. This company's No. 1 Fagin, NE SE NE, Section 17-4n-69, half mile north of No. 1-A State, is making around 900,000 feet of gas a day, an increase of about 100,000 feet compared with a year ago when it was put on production to supply a local industry with gas for fuel. The gas was found at 3,273-3,312 feet and the hole was not drilled to the oil horizon found in the No. 1-A State. The Standard Oil Co. of Colorado's No. 1 Hertha, NW cor., Section 21-4-69, just to the south of No. 1-A State, is drilling below 210 feet. This company operates the Five Square company's properties.

Another Larimer County wildcat which again is active is Stanley Barrow's No. 1 Barrows, NW cor. SE, Section 7-11n-68. Round Butte Dome, which resumed drilling this week at 2,045 feet near the top of a second sand in the Morrison. The 6⅝-inch is at 1,995 feet. This well had some water and a show of oil in the Muddy, less water and more oil in the Dakota and no water and shows of oil in both the Lakota and first Morrison. The objective is the Sundance and the operation is attracting considerable attention. Formerly it was believed the formations were not marine in character, but recent investigations have disclosed outcrops which are definitely described as being marine. The other Larimer County operation that is active is the Continental Oil Co.'s No. 4 Scott, NE SE, Section 6-9n-68, Wellington Dome, which is drilling at 3,610 feet.

Jackson County

In Jackson County, the Producers & Refiners Corp.'s No. 1 Hendershot, SE NE, Section 2-6n-81, Pole Mountain area, is drilling at 2,980 feet in shale, and the Midwest Refining Co.'s No. 21-X Rich, SW NW, Section 9-6n-80, is drilling at 3,010 feet in gray sandy shale with 85 feet of water in the hole.

In Routt County, the Texas Production Co.'s No. 3 Carstarphen, NE NW, Section 5-6n-86, Tow Creek Dome, is drilling at 660 feet.

In Rio Blanco County, the White Eagle Oil & Refining Co.'s No. 1-A Fordham, NW SW, Section 9-2s-96, Piceance Creek, is moving in derrick to replace the one destroyed by fire recently. Applications for prospecting permits by various interests which were pending on this and adjoining structure when the Department of Interior's order of March 12, 1929, automatically cancelled same, have been reinstated and the permit situation entirely cleared up. The land on this and adjoining structure is all government land and about 38,000 acres are now held by permittees. The Texas Production Co.'s No. 1 Potter, NE SW, Section 30-2n-96, White River Dome, is drilling at 5,009 feet. The depth indicates that the drill is below the Wasatch formation and may test the Mesaverde horizons of Cretaceous Age.

In Mesa County, the Argo Oil Co.'s No. 1 Peerless, NE cor. Section 23-8s-104, High Line structure, is bottomed at 2,712 feet and underreaming the 8¼-inch.

In Montrose County, the Uncompahgre Oil & Gas Co.'s No. 1 Colorado, SW NW, Section 27-50-10, will be abandoned at a total depth of 2,031 feet, and the company plans to drill another test a half mile to the south and a little to the west. It is understood arrangements have been made to use one of the rigs which has been standing for some time in the Paradox Valley in western Montrose County where the General Petroleum Co. drilled three wells and that the new test will start in a 20-inch hole. No. 1 went through the Sundance and had some shows of oil, amounting to about 1 bbl. per day.

Fremont County

In Fremont County, the Continental Oil Co.'s No. 5 Vezetti, NE NE, Section 11-19-70, Canon City district, was dry and abandoned at 3,240 feet.

In Huerfano County, the Parker Club, Inc.'s No. 1 Fee, Section 4-28-68, Badito-Alamo structure, is bottomed at 3,760 feet and is lowering the 6¼-inch from 3,678 feet. Recent cuttings indicate that the hole is in the Greenhorn lime. It has been showing considerable gas with some water, but gas is not in commercial quantities.

In Pueblo County, the Beulah Dome Syndicate's No. 1 Hedland, NW SW, Section 7-23-67, is drilling at 855 feet in the Permian with shows of oil and gas.

In Jefferson County, the Ruby Hill Oil & Gas Co.'s No. 1 Braden, SE cor. Section 24-4s-69, is drilling at 3,523 feet in gray lime and carrying the 6¼-inch

In Lincoln County, the Kelly Oil Co.'s No. 1 State, Section 36-14s-57, is reported shut down at 2,954 feet to finance. The hole is reported bottomed in the Dakota formation and to have been showing a little gas and no water when drilling was suspended. The last string of casing run was the 4¾-inch of which 2,450 feet was in the hole. This well has had several shows of oil and gas, but there has been considerable doubt as to the identity of the formations drilled.

In Yuma County, the Phillips Petroleum Co.'s No. 1 Andrews, NW NW, Section 3-2s-42, is drilling below 4,200 feet.

WYOMING

The Wyoming State Land Board has awarded the lease on Section 36-40-79 in the Salt Creek Field to the Midwest Oil Co., a subsidiary of the Salt Creek Producers Association, and also awarded that company a contract to purchase the state's royalty oil. The lease on Section 36 expired recently and bids were received by the land board on September 30 for another five-year leas. There were two bidders, the Midwest Oil Co., and the White Eagle Oil & Refining Co. The Midwest divided its bid into three proposals, one of which was to pay the state a royalty of 65 per cent of the oil produced, provided it was given the right to purchase the royalty oil at the Prairie Oil & Gas Co.'s posted Mid-Continent prices for crude oil of the same gravity. Bids for the royalty oil were received on October 21. The land board waited until after these were in before announcing its decision in regard to the lease as the two were tied together in the Midwest proposal. The bid of 65 per cent royalty with the right to purchase the royalty oil was the one accepted. The Midwest had the lease in the preceding five-year period on the same royalty basis, but the royalty oil was taken in kind and sold to the highest bidder.

A large well was completed this week in the third Sundance sand in Salt Creek in the Wyoming Associated Oil Co.'s No. 33-SD-3 in the NW Section 35-40-79. Total depth was 2,807 feet and it made 1,988 bbls. the first 24 hours without being shot. The Midwest Oil Co.'s No. 3-L, SW Section 26-40-79, was completed in the Lakota at 2,431 feet and made 72 bbls. initial without being shot. This well was started with the intentions of drilling to the third Sundance, but when a good producer was found in the Lakota, it was decided to stop at that horizon. The Midwest Refining Co.'s No. 29-DT, WN Section 35-40-79, the deep test on Wyoming Associated lease which is to go to the granite, is drilling at 2,355 feet in shale and hard lime shell.

La Barge Field

The Rainbow Oil Co. has a good completion in the La Barge Field in Sublet County in its No. 9-A, SW Section 3-26-113. It was completed at around 1,000 feet and averaged 100 bbls. a day the first three days. Charles S. Hill's No. 1 La Barge Royalties, NW, Lot 2, Section 3-26-113, struck a pay at 540 feet which sent the oil over the top. However, the flow soon subsided and drilling was resumed. The objective in this well, which is one-fourth mile to the northwest of the Newlon discovery well in this field is expected at 750 feet. H. A. Rispin and others' No. 1, Section 10-26-113, is bottomed at 620 feet and underreaming the 10-inch. B. E. Taylor is in charge for the California interests. The Sackrider interests' No. 1, Section 3-26-113, is underreaming at a total depth of 590 feet. W. D. Newlon's No. 1, SW Section 12-26-113, is recementing at a total depth of 2,380 feet, the first cementing job failing to shut off the water. This well had a large flow of gas at 2,325 feet.

In Lincoln County, the Midwest Refining Co.'s No. 1 Little Grays River, SE SE, Section 25-37-117, unsurveyed, is shut down at 1,698 feet waiting for cement to set. The 10-inch was cemented at 1,648 feet.

In Fremont County, the Kinney-Coastal Oil Co.'s No. 1 Dykeman, SE SW, Section 22-3n-1w, Pilot Butte Dome, which has been blowing since it drilled itself in two weeks ago and wrecked the derrick, probably will be brought under control within a few days. A valve to go over the 8¼-inch has arrived at the well and no great difficulty in putting it on the pipe is expected. The flow of gas is estimated at 50,000,000 to 60,000,000 feet. The Texas Production Co.'s No. 1-A State, SW SW, Section 36-34-95, Alkali Butte, is shut down at 620 feet. The hole went crooked several weeks ago and so far efforts to starighten it have been in vain. Owing to the steep dips on this structure, crooked holes have caused trouble almost every time a test has been drilled.

Deeper Pay at Hamilton

A deeper pay is reported to have been found on the Hamilton Dome in Hot Springs County, in the Empire State Oil Co.'s No. 1-A, SW Section 14-44-98, which is drilling in the Tensleep at 2,750 feet with 1,700 feet of oil in the hole. This structure is producing around 1,300

(Continued on Page 138)

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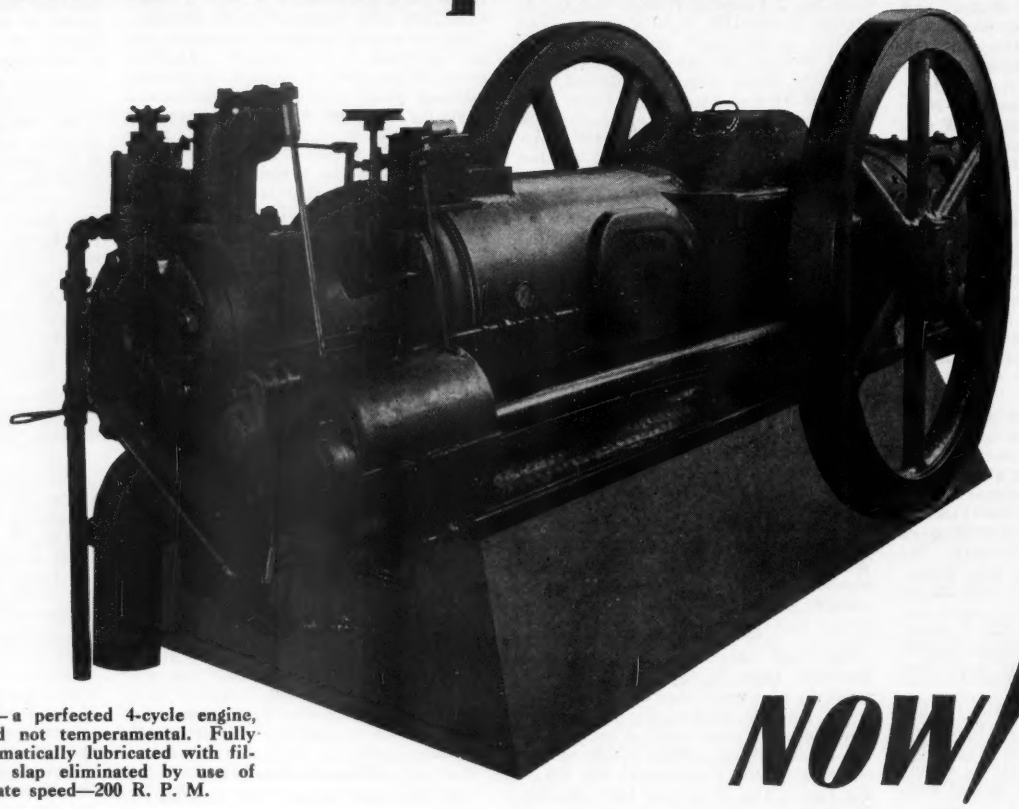

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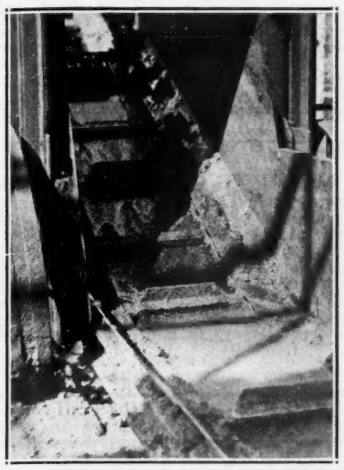
Practical Suggestions in Refining

By W. T. Ziegenhain

LUGS WELDED ON SCRAPER IMPROVES COKE CONVEYOR

The coke conveyor at the Independent Oil & Gas Co.'s Kansas City, Kans., refinery was not able to carry away the coke as fast as the Dubbs units could be cleaned. The 1-inch scrapers on the continuous belt supplied with the conveyor apparently tunneled under the pile of



Picture of coke conveyor for Dubbs units at Independent Oil & Gas Co.'s plant in Kansas City, Kans., showing short lengths of angle iron welded to scrapers to increase carrying capacity.

coke instead of moving it and in a short time the pile built up sufficiently high to spill over the sides. Various means of overcoming this were tried.

Considerable benefit was derived from welding short lengths of angle iron into the scrapers so as to increase its height. Some changes had to be made in the supports for the conveyor where there was not enough clearance underneath. The ends of each angle iron were cut with a slope as shown in the accompanying picture which provided sufficient clearance without having to make major changes in the conveyor frame and supports.

These angle irons were welded to alternating scrapers instead of on every scraper, as it was thought equally favorable results would be obtained.

REFINERY LABOR PAID HIGH SCALE OF WAGES

Refinery labor is paid a higher average wage scale than men in most other industries, according to the monthly labor review of the United States Department of Labor. The average refinery scale per hour for common labor on entering employment is 45.7 cents per hour and compares favorably with 43.7, which is the average scale of wages for all industries in the United States.

For comparison, those industries showing a higher scale than that of refining include general contracting which is 48.3 cents, and electrical machinery which is 45.9 cents. Those industries reporting a lower average scale include the lumber saw mills at 32 cents, foundry and machine shops 39.8 cents, slaughtering and meat packing 42 cents, leather 42.2 cents, iron and steel 42.5 cents, public utilities 42.8 cents and pulp and paper mills 44 cents. In addition to the relatively high wages paid labor in refineries, trend of employment for the past 18 months has been consistently upward, the employment at present equaling the average of 1926, a year during which employment in

(Continued on Page 131)

METHOD DEVELOPED TO EVALUATE TEMPERATURE-VISCOSITY RELATION

A method of evaluating the temperature-viscosity relation in a lubricating oil has been developed by E. W. Dean and G. H. B. Davis of the Standard Oil Development Co. at Bayonne, N. J., that may readily find a general application. Need for such a method of evaluating the viscosity change for a given temperature change is being realized as more prominence is given to this characteristic of oils from a marketing standpoint. It has been generally accepted that an oil which shows the least change in viscosity over a given temperature change is a superior oil but this property has been considered inherent and depended upon the kind of crude from which it was made. In general, Pennsylvania oils were shown to have a lesser viscosity change for a given change in temperature than Mid-Continent oils and, in turn, Mid-Continent lubricants showed a less viscosity change than the Gulf Coast and California oils. This was due to the difference in the chemical composition of the respective oils.

More recently, however, research work in various refineries has upset the old ideas regarding the characteristics of oils made from the crudes produced in the respective areas. By the use of vacuum distillation, selective solvents, indirect

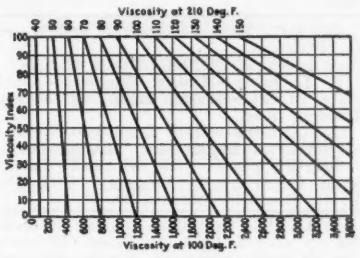


Chart to be used in determining the viscosity index of an oil from its Saybolt Universal viscosity at 100 degrees Fahrenheit and 210 degrees Fahrenheit.

heating during distillation and highly reactive chemical agents such as aluminum chloride, which removes those constituents in the oil which caused the oil to show a great viscosity change, the crude becomes a lessor factor. In addition, refiners are investigating the properties of crudes produced in the individual pools in all areas with the hope of finding some crudes which produce lubricants with a minimum viscosity change. These crudes are being segregated and run separately instead of being run into the pipe line and mixed.

Faced with these problems, it appears logical that greater stress will be placed on the viscosity-temperature relation of lubricating oils both from a manufacturing and marketing standpoint. The fact this quality in an oil may be expressed numerically by use of the method of E. W. Dean and G. H. B. Davis as outlined below, makes their work of considerable interest. The method as outlined by the authors follows:

"This system of classification permits expressing the viscosity-temperature coefficient of an oil as a simple function of its Saybolt Universal viscosities at 100 degrees Fahrenheit and 210 degrees Fahrenheit. This function, hereafter referred to as the 'viscosity index' is independent of the actual viscosity of the oil in question and has the nature of a constitutive property; in other words, the viscosity indexes of all lubricating fractions, separated or refined by conventional methods from any given crude, ordinarily are approximately constant.

TABLE 1
Experimentally Determined and Calculated Saybolt Universal Viscosities of Selected Series of Lubricating Oils

Series H		
Vis. at 210° F.	Vis. at 100° F. Exper.	Calc.
49.0	242.5	238.5
53.5	313.0	313.9
59.5	414.0	417.0
67.0	545.0	550.0
76.5	727.5	725.0
89.0	971.5	966.2
105.0	1,292.0	1,294.5
Series L		
Vis. at 210° F.	Vis. at 100° F. Exper.	Calc.
42.0	180.0	166.7
46.0	280.0	291.0
50.0	420.0	422.0
55.0	580.0	596.1
59.0	750.0	742.8
63.0	930.0	896.5
71.0	1,210.0	1,224.5

TABLE 2
Viscosity Data at 100° of Series H and L Oils for Viscosities at 210° Fahrenheit

Visc. at 210°	Visc. at 100° Series H	Visc. at 100° Series L	Visc. Difference L—H=D
40	93	107	14
45	173	261	88
50	255	422	167
55	339	596	259
60	426	781	355
65	514	976	462
70	604	1,182	578
75	697	1,399	702
80	791	1,627	836
85	888	1,865	977
90	986	2,115	1,129
95	1,087	2,375	1,288
100	1,189	2,646	1,457
105	1,294	2,928	1,634
110	1,401	3,220	1,819
115	1,510	3,524	2,014
120	1,620	3,838	2,218
125	1,733	4,163	2,430
130	1,848	4,498	2,650
135	1,965	4,845	2,880
140	2,084	5,202	3,118
145	2,205	5,570	3,365
150	2,328	5,949	3,621
155	2,453	6,339	3,886
160	2,580	6,740	4,160

Basic figures used in developing the system of viscosity indexes were obtained by accurate tests of two series of lubricating oil samples, each derived from an extreme type of crude oil. The oils having a small change in viscosity with temperature are here designated as series H, and the oils having a large viscosity coefficient as series L.

"Saybolt Universal viscosities of all of the samples were determined carefully at each of the standard temperatures of 100 degrees Fahrenheit and 210 degrees Fahrenheit as shown in Table 1. It was found that the general relationship between viscosities at 100 degrees Fahrenheit and 210 degrees Fahrenheit for each series of samples could be expressed by an equation of the general form

$$Y = a + bx + cx^2$$

Y = viscosity at 100 degrees Fahrenheit.

x = viscosity at 210 degrees Fahrenheit.

a, b and c are characteristics of the series of oils. Their values were calculated for each series of samples, using the method of least squares. The equations are as follows:

Series H: $Y = .0408x^2 + 12.568x - 475.4$

Series L: $Y = .216x^2 + 12.07x - 721.2$

Viscosities calculated by the above equations are shown in Table 1, compared with the experimentally determined values.

"From the equation above, Table 2 was prepared to show the equivalent viscosity at 100 degrees of each series of oils, for every viscosity at 210 degrees Fahrenheit from 40 to 160. Table 2 also includes, for each viscosity at 210 degrees Fahrenheit, a figure representing the difference between the calculated viscosities of the series L and series H oils. From this table has been developed a system of so-called viscosity indexes which indicated the viscosity-temperature coefficients of oils on a scale in which the series H oils are taken as 100 and the series L oils are taken as 0. The viscosity index of an oil may be calculated from the equation:

$$\text{V. I.} = \frac{L-U}{L-H} \times 100$$

where V. I. is the viscosity index, U the viscosity at 100 degrees Fahrenheit of the oil in question; L.H. = respectively, the viscosities at 100 degrees Fahrenheit of the series L and the series H oils having the same viscosity at 210 degrees Fahrenheit as the oil in question. The equation may be used more conveniently in the form

$$\text{V. I.} = \frac{L-U}{D} \times 100,$$

in which D = L—H. The values of D are included in Table 2."

"The following example illustrates the method of calculating the viscosity index of an oil having a viscosity of 60 at 210 degrees Fahrenheit and 600 at 100 degrees Fahrenheit:

$$\text{V.I.} = \frac{781-600}{781-426} \times 100 = \frac{181}{355} \times 100 = 51$$

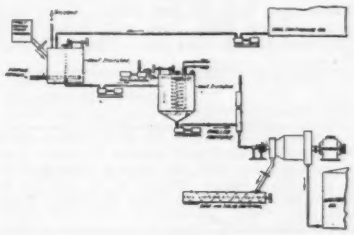
"The possibility of estimating viscosity indexes, without making arithmetical calculations based on Table 2, is shown in the accompanying set of curves. The example cited above is solved by following the oblique line marked 60 until it crosses the vertical line marked 600, then following a horizontal line to the viscosity index scale appearing at the end of the chart. This chart, incidentally, indicates a degree of accuracy above the experimental error and an unavoidable exaggeration of the importance of differences in viscosity indexes for the lower viscosity oils."

Note—Republication of data enclosed in quotation marks not permitted except with approval of authors.

Recent Patents

ADD SOLID MATERIAL TO DEWAX OILS

1,732,143. Process of Removing Amorphous Wax from Petroleum Oils. Pierce Mason Travis, Ridgewood, N. J., assignor to Travis Process Corp., Jersey City, N. J., a corporation of Delaware. Filed July 16, 1927. Serial No. 206,332. 7 Claims. (Cl. 196—19.)



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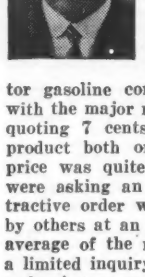
Chicago Markets Showing No Activity

Orders for Gasoline on Contracts Come In Well but Spot Demand Light. Distillates Not Moving Freely, Prices Easy

By J. B. Waldo

CHICAGO, Oct. 28.—Markets for all products were not active here today and the lighter oils were bought lightly by spot buyers. Orders for gasoline against contracts were coming in well but the spot demand was light. There were some inquiries for November 1 being for 100 cars from the Benzolene Motor Fuel Co. The spot price for U. S. Motor gasoline continued to be 7¾ cents with the major refiners while others were quoting 7 cents for the same grade of product both on Group 3 basis. This price was quite general although a few were asking an eighth more and an attractive order would have been accepted by others at an eighth cent less than the average of the market. There was only a limited inquiry for the higher gravities and prices were unchanged from the close of last week.



Kerosene was in small demand and while 4¾ cents was frequently quoted to spot buyers sales were made at a little less and the product was not strong. Distillates were not moving freely and prices were easy. Gas oils, although not in active demand, were firmly held and some sellers were asking a little higher price for a desirable zero gas oil. Straw gas oil was quoted from 3½ to 3¾ cents and zero oil in this color was very hard to buy from refiners at any price. The higher gravities in zero fuel oils were in demand at full prices quoted last week. The weather has been a little colder and the demand has been increased for gas oils more than for distillates and the latter are also in better supply. Inquiries for industrial fuels were received in about the usual number but there was nothing to be found in the way of any change in heavy fuel oils. Prices are strongly held and buyers find a restricted supply, comparatively little really desirable fuel oil being offered.

Storms Cut Gasoline Consumption

During the first four days of last week in this section gales of extreme violence, accompanied by drizzling rain and lower temperatures did much to restrict gasoline consumption and to reduce the buying of the lighter products, but having a favorable effect on the market for furnace oils. At the close of the week more seasonable weather prevailed and the gasoline market showed a better tone with reports of large purchases of higher test gasoline for export. This, it was expected, would give some of the refiners runs that would take them off the market for several weeks and to that extent reduce the amount of gasoline being offered, sometimes at concessions in price.

The orders, according to reports here, were divided among smaller refiners and as a rule these smaller refiners have been the ones most anxious for orders and who sought the business of the marketers and of distributors directly as they had no real sales organization of their own nor any large number of contracts or owned outlets. But there are also many of these refiners who cannot run the export grades and who will still be in the market for spot business. Another item of importance in this market is, that so much gasoline sold throughout this territory does not come from refiners who are located in the Mid-Continent Field and who will be affected only indirectly by these export orders.

Sales of Higher Gravities Affected

The fact that the domestic sale of the higher gravities has been cut into seriously by the popularity of the antiknock gasolines is becoming more and more evident. A check made of the leading refiners who do business in this territory showed that almost every one had been licensed to blend Ethyl Gasoline and would soon have such material on the market if they did not already have their own brand.

There is also a certain amount of competition developing in the shape of price irregularities. The general rule is to charge three cents a gallon more for the ethylized product than for the white gasoline, but there are some who are asking a premium of 2½ cents and even where the premium is 3 cents, the difference in the method of computing the price permits of a variation of at least one-half cent. Many base their price on published market reports. Some designate the low of the published report as the basis of their price and others the average of these reports.

The recent quotations in these publications used as a basis for the price have shown a range of one cent and the average of the high and low of the market as quoted would be one-half cent above the low quotation. If one refiner makes his price for the ethylized product 2½ cents above the low and another 3 cents above the average of the quotations, there would be a difference between the prices to the jobber for the product of these two refiners of one cent a gallon.

At least one large refiner bases his price for the ethylized product on his own spot market price for U. S. Motor gasoline and as the present market price of that refinery is three-eighths of a cent below the spot price of the major refiners their price for the ethylized gasoline from this refiner is really seven-eighths of a cent below the price of those refiners who are basing their market on their present spot price and five-eighths of a cent below the prices based on the average of the published quotations.

Price Situation Weak

The price situation here last week was weak at the beginning owing to the slow spot demand and the bad weather which it was maintained would seriously reduce consumption over the country districts. Another indirect factor was the reduction in the price of crude from the flush California fields. It was stated that this lower price for California crude might result in larger shipments from the West Coast to North Atlantic ports.

At the close of the week the market was more firm on the attitude of Group 3 refiners who in many cases advanced their price an eighth or even a quarter of a cent stating that there were some large buying orders both export and domestic to be placed which would relieve the pressure on the market. The trade here was very willing to have a stronger market as they viewed with misgivings the steady drift of prices downward. It frequently has been stated here by leading sellers of gasoline that the low of the market for U. S. Motor gasoline should not be less than 7 cents, Group 3, and some contended that that price was too low on the present price for gasoline crudes. Undoubtedly some of the low prices made by southwestern refiners have been made in competition with refineries at differential points.

The refining capacity of this section is constantly growing. The crude is obtained either from nearby fields at low transportation costs or by pipe lines at much less expense than the cost of delivering the refined products of the crude from the great refining centers in the Southwest. This difference of crude costs and delivered costs on refined products makes it possible for the Midwestern plants to sell at prices much below the cost of the refined products to the Group 3 refiner. To obtain some of the orders placed by distributors in these differential sections refiners in all parts of the Southwest have quoted low prices that have had much to do with the price situation in this territory.

Major Refiners Stabilize Price

Major refiners were holding steadily to the 7¾-cent spot price and undoubtedly intend to maintain that price. Gasoline from other sources of supply was sold early in the week freely at 6¾ to 7 cents according to buyer and some attractive orders were accepted as low as 6⅞ cents, but at the close of the week prices had grown much more firm and 6⅞ cents was the bottom price with 7 cents a low quotation. In several instances, jobbers who had declined offers to sell them at market earlier in the week, came back later with orders at those prices and when told that the gasoline could not be sold at the prices previously quoted the jobbers did in most instances place business at advanced prices. There was a real feeling that possibly prices were going to be higher and at any rate they were higher for immediate business.

The outlook for the future was unsettled and conflicting views were expressed as to the prices that would prevail over November. Some of the sellers stated that they would sell at 7 cents over November while others would not sell a car for that month at that price. Of the buyers, some were placing orders for a little more material than they had expected to purchase at this time. Others refused to pay the higher prices, stating that they could run along for a while on what stocks they had, believing that they could buy as cheaply when they needed material as they could today. The contract business was good, that is jobbers are still taking the quantities called for in their contracts and few ask for any delay in shipments or fail to give shipping instructions for their quotas month by month.

Kerosene Still in Demand

Kerosene is not quite so dead as some had begun to believe. There was a demand for limited quantities during the week, and some of the jobbers stated that the fall plowing was still under way and that they expected still to have a demand for kerosene for tractor fuel. In some cases jobbers who had permitted their stocks of kerosene to decline to use the storage for distillates decided to buy another car of kerosene to care for the continued demand. There is plenty of material available and prices are practically unchanged.

The demand for distillates has improved a little owing to colder weather, but most of the business has come from the country districts, where the jobbers have less storage and for that matter a great deal less furnace oil business than in the larger towns and the cities. The furnace oil business is really largely confined to the larger towns and to the cities. The smaller towns and the rural districts are not generally prepared to install oil burners. The distributors in the larger places and particularly in this city have supplies on hand and material ordered that will carry many of them to the first of the new year unless there is a long spell of really cold weather.

The offerings continue fairly liberal and prices unchanged from last week. Some of the larger refiners have advanced their prices for distillate but in connection with the new prices state that they have nothing to sell, needing all that they have or expect to have to care for their regular customers. One refiner has made a quotation of 4 cents for his 38-40 distillate for a period of three or six months. Most of the refiners who are holding for full prices or even asking higher prices for their distillate are large concerns but others who depend more on spot business have made more sales at a little less than the usual market quotation. There does not seem to be any excessive supply but only a temporary surplus owing to the mild weather and it is not improbable that when the colder weather does come in another month or more the market may be higher.

Zero Gas Oils

The demand for zero gas oils has been better than for distillate but not active. If there has been any change it has been towards a firmer tone attributed for the most part to the cooler weather and the feeling that the actual consumption of furnace oils must be increasing. The larger local distributors have supplies on hand, some of them holding cars on the track that they are unable to take into storage yet. Most of the material that is being delivered right now is on old orders and at prices as low as 3 to 3¼ cents for distillate and 2¾ cents for zero gas oil, which makes the concern receiving the oil willing to pay a few days demurrage if necessary, to keep the material, for these prices could not be had by buyers today.

There has been a little trading between distributors and between distributors and marketers which was profitable to all interested. Refiners generally are asking 3⅛ cents for a zero dark gas oil with some holding for a higher price. The 30-32 gas oil can be had at 3 cents or a little less at times, these being refinery costs for resale or to large consumers if there should be any.

The U.G.I. gas oil market has been more firmly held than the zero oil as the material is harder to buy and it is currently reported that one of the largest of the integrated companies has been picking up material for its cracking process which requires a prepared oil of the gas oil type. During last week, it was hard to buy a good gas makers' oil at less than 3 cents, and it was just as hard to sell it above that price, which made the business of selling gas oil at a profit, not the easiest thing. The situation frequently confronts the specialists in fuel oil who in many instances must compete with their own source of supply for the orders that are in the market.

The demand for gas oil for gas making is largely supplied on contracts made earlier in the season, to cover the ensuing year and some of these contracts were made at low prices and covered by purchases from refiners who in several instances have gone out of business. This has obliged some dealers in gas oil to enter the market a second time on orders which they believed they had covered. The prices they have paid have been higher than those at which they bought previously, and several promising deals have been made much less profitable. This is one of the reasons why gas oil today is not being freely offered.

Heavy Fuel Business Dull

The business in heavy fuels is just plain dull. There are of course, the contracts which are being filled and for the most part the industrial and other users of heavy fuel oils are ordering out their cars as agreed. Occasionally there is some buyer who has not used as much fuel oil as was expected and he is reducing his takings temporarily. Adding to the industrial demand are the requirements of the buyers of oil for the heating of the larger buildings, stores, hotels, apartments and the like, and the factory plants.

So many opportunities are passed over for increasing the sale of oil for fuel, that it seems to many outside of the industry

(Continued on Page 131)

Eastern Markets Show Steady Tone

No Price Changes of Any Importance in Any Division of the Trade. Watching California Closely for Effect of Cut

By A. E. Mockler

New York Bureau, The Oil and Gas Journal, Rooms 1919-21, No. 154 Nassau Street

NEW YORK, Oct. 28.—Interest in the national picture, particularly with respect to the outlook in California, has overshadowed developments in the Eastern territory in market interest this past week. East Coast markets, on the whole, have shown a steady tone, with no price changes of outstanding importance in any divisions of the trade.

Eastern refiners and marketers are watching California closely for the effect which the sweeping crude cuts in the Los Angeles Basin fields may have on the gasoline market. With California gasoline already in an extremely important position in the East, the possibility of renewed price competition from California motor fuel, following the cheapening of "sweet" crude on the Pacific Coast, is a subject of absorbing interest in the Eastern trade. The sharp reduction in California crude not only opens up the possibilities of intensified competition from California gasoline in the East, but also raises the question of possible extensive competition from California fuel, gas, and Diesel oils in this area, should the present low crude prices now in effect in California hold. The general feeling here appears to be that the low price schedule on the Pacific Coast will be short-lived, however, and that the conditions which brought about the price slash will be corrected shortly.

Weather conditions have made for heavy gasoline consumption throughout the entire Eastern area during the week, and movement has been active in both tank car and tank wagon markets. The fair weather, however, has had just the opposite effect on sales of kerosene and furnace oils, both of which have been quiet.

Tank Car Gasoline

Substantial movement of U. S. Motor gasoline is reported and the market is holding steady at 8¾ cents per gallon here and 9 cents per gallon at South Atlantic refinery terminals. Agitation for a quarter-cent advance to a 9 cents basis in the local market appears to have died down since the cut in California crude, and the trade here is sitting back to watch developments in the coast motor fuel market before taking further action in the East.

Practically all of the principal factors are now at the 8¾-cent level in the tank car market, and in this respect there is probably a greater uniformity of price in the wholesale market at present than at any time previously this year, shading having been more or less rampant up to now.

Tank Wagon Gasoline

With prices on a fairly stable basis, marketers are now concentrating their sales attention on premium motor fuels. Pure Oil Co. is now out with a new "vapor phase" gasoline in the local market and has been advertising this fuel rather extensively. Other refiners are also stressing the cold-weather qualities of their premium fuels.

New stations are seen in several parts of New York City, including a number of Shell stations, a few Richfields, and now "Conoco" gasoline, marking the entry of Continental into New York City.

Weather conditions have been very favorable for motoring throughout the East this week, and retail sales are heavy. The strike of tank wagon drivers in New York City is a thing of the past, and deliveries are back to normal.

The big football games at various points in the East are important factors in stimulating week-end consumption of motor fuel, and "college towns" are active buyers of gasoline in the tank car markets about midweek.

Kerosene

Routine trading in kerosene has prevailed throughout the week. Leading sellers continue to quote the market at 7¾ cents per gallon, and this quotation is being adhered to by most of the principal interests here. A number of the smaller sellers, however, are willing to book spot and nearby orders at concessions from this level.

Tank car movement of kerosene has eased off a little during the week. Jobbers have filled their storage, in many instances, and the mild weather during the greater part of the week has not been conducive of any great increase in consumption. The market at present is waiting on a spell of real cold weather. Should winter come in early this year, the trade looks for an advancing market on kerosene. A late winter, however, would work the opposite way, and probably force prices to remain at their present levels well into the winter season.

Export movement has held up exceptionally well locally, on both the bulk and cased product. Foreign shipments, in fact, have contributed substantially to the current firm position of kerosene in the East, and no let-down in this direction is looked for in the near future.

Tank Wagon Kerosene

Pricewise, there have been no important developments in the kerosene tank wagon markets in the East this week. Lacking any pronounced alteration in the position of the wholesale market at the refineries, marketers have been content to let well enough alone in the tank wagon field.

Consumption has been rather sluggish, due to the warmer weather, and tank wagon delivery departments have not been rushed by any means. Competition in kerosene is not as strong as in gasoline, and barring any unforeseen heavy movement of kerosene from other refining territories into the Eastern area the outlook is for a steady tank wagon market throughout the winter.

Paraffin Wax

Refiners are showing definitely stronger views on paraffin wax, both crude scale and fully refined grades, and the local jobbing market reflects this situation. Quotations remain firm at the advanced levels recently attained, and there is some talk in local trade circles regarding the possibility of further fractional price mark-ups within the next several weeks.

The lower melting points appear to be coming in for fairly heavy inquiry this week, from both the domestic and the export trades, and considerable business in 20, 30 and 50-ton lots is reported. The higher melting points are relatively quiet at the moment, but stocks are not excessive, and the market position is strong. Crude scale likewise has been active this week and is strong both at the refineries and on spot.

A number of refiners who were offering wax for delivery over the balance of the year at quotations in effect at the start of the month are now definitely firmer in their price ideas. Some sellers have withdrawn their offerings and are quoting spot at current levels, and December shipment wax at about an eighth cent per pound over the spot market.

While the position of the wax market from a statistical standpoint, as reflected by refinery holdings, is rather "bearish," the entire trade seems to look for pronounced improvement within the next several months.

Furnace Oil

Milder weather in the East has resulted in a slight slackening off in furnace oil demand, but the market has lost none of its strength. Marketers are completing deliveries on early-season contracts, and are making plans for a heavy volume of business over the balance of the year and during the first quarter of 1930.

The bulk of the domestic oil business in the East for the current season is already "sewed up" on seasonal contracts, but there is still a fair volume of spot business available from large industrial users, many of whom cover half of their requirements by contract, and pick up the balance in the open market.

Lub Oils

A steady undertone featured the market for cylinder stocks this week with prices well held on all grades. Refiners' stocks appear to be centered in strong hands and there is very little in the way of selling pressure discernible on any grades. Current buying is light, but in the absence of heavy offerings this amount of business appears fully sufficient to sustain the market.

Bright stocks in particular appear to be showing strength at the moment and quotations have hardened somewhat. Stocks of both light and dark oil on the spot position are not large and offerings for refinery shipment are by no means excessive.

Domestic blenders and compounders have slightly widened their buying operations this week and there is more demand for prompt shipment lub oil reaching sellers. Export inquiry is also along broader lines, although the present volume of actual business in cylinder stocks for shipment abroad remains unlimited.

No price changes have developed on red or pale oils, and the market position has undergone no important change. Refiners have noted a slight picking-up in the tank car movement to domestic industrial consumers, and the export volume has also shown a little improvement.

Demand for package oils in the retail end of the business is reported to be holding up at satisfactory levels. With automobile use more of an all-year-around proposition, leading refiners in this area have developed a number of cold weather lub oils and they look for record-breaking sales on their canned product this year. Most of the leading marketers are now conducting extensive sales campaigns on these lubs among their retail distributors. Prices for these oils, on the whole, are about in line with the schedules prevailing at this time last year, although lub oil is now coming in for its share of price cutting in certain retail channels, much the same as has been the case with gasoline.

Diesel Oil

The principal development this week is the possibility of increased competition from California refiners as a result of the drastic cut in crude made in several California fields during the week. California Diesel has been priced advantageously for some weeks back and with a lowering in charter rates for tankers, some movement eastward had been looked for. The situation brought about by the sharp price cuts in crude, however, had been unlooked for, and Eastern refiners are viewing the outlook with some concern. One consignment of 74,500 bbls. of Diesel oil is now afloat for New York from Los Angeles on the tanker Betterton. California Diesel can now be laid down at New York prices substantially under those quoted by the Eastern refiners and the movement of this oil eastward in heavy quantities would undoubtly be reflected in the price basis here. Thus far, it will be recalled, Diesel has held up in the face of price cuts on bunker "C," the old differential between the two having been materially widened two years ago when bunker "C" prices broke sharply.

Eastern refiners are quoting Diesel unchanged at $2 per barrel at principal East Coast refinery terminals and a good movement is recorded. Marine consumption is steadily increasing and the outlook for a broader domestic industrial demand is also quite favorable. A large part of the current movement consists of shipments against standing contracts, although a fair amount of day-by-day business in the spot market is noted. Low-grade Diesel oil is moving steadily into consumption as furnace oil for domestic heaters.

Gas Oil

Locally the situation is without change this week. Refiners continue to quote the market for 32-36 recycled gas oil at 5¼ cents per gallon, although offerings at 5 cents and as low as 4⅞ cents per gallon are still reported from some quarters of the market. Continued increase in consumption by artificial gas companies is reported as the season progresses and low-grade gas oil is moving out on furnace oil contracts.

California is again coming into the eastern picture on gas oil, a shipment of 80,000 bbls. from Los Angeles on the tanker Atlas now being afloat for New York. Eastern refiners believe that California interests will make more of an effort to dispose of surplus gas oil stocks in the eastern area during the winter months. The latest price cuts in California crude, it is pointed out, give Pacific Coast refiners considerably more leeway in offering their refined products at competitive prices in the East, and leading California interests with established distribution in the East are expected to take advantage of this situation during the coming winter season to cut down their surplus holdings of gas and fuel oils.

The Gulf is also being drawn on rather heavily to supply local needs for gas and fuel oils, shipments aggregating 224,000 gallons leaving Houston for New York during the week ended October 19.

Fuel Oil

Demand continues steady and the market tone only slightly less so. Refiners here are quoting bunker "C" at $1.05 per barrel, at terminals, and $1.10 per barrel barged alongside within the harbor limits. Heavy demand from steamship companies is reported, principally against standing contracts. Most of the larger sellers are booked clear through 1930 at current price levels, so the usual flurry of contract solicitation which normally would have developed at this season will be absent this year.

Refiners are now of the belief that there is no possibility of any upward movement in bunker oil prices during the balance of 1929. The reduction in California crude prices this week, it is felt, sounded the death knell for higher bunker oil in the East. Even with a high charter rate, California refiners, working on 40-cent crude, would be in position to dispose of surplus holdings of bunker oil along the Atlantic seaboard on a profitable basis if the market in the East were pushed up to $1.25 per barrel, it is said. Indeed, it is not beyond the bounds of possibility that California competition, if

(Continued on Page 131)

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Natural Gasoline Manufacture

Organize Company To Manufacture and Sell All Products

Announcement was made this week in Tulsa of the organization of the firm of Hanlon-Buchanan, Inc., for the purpose of engaging in the manufacture and sale of natural gasolines and special products obtained as by-products in the manufacturing operation.

The new firm has been organized by a group of men who have been identified for several years with the natural gasoline industry. E. I. Hanlon is chairman of the board of directors; D. E. Buchanan, president; A. F. Wood, vice president; J. H. Boyle, secretary and treasurer; and M. F. Waters, director.

A processing plant is now being built at Good Hope, La., and general offices will be maintained in Tulsa. The offices will be opened November 1. The plant with a complete terminal at Good Hope will process conventional grades of natural gasoline into a highly volatile yet stable gasoline which can be shipped in cargo according to officials of the new company with no more loss than attends shipping motor fuel. The cargoes will be shipped in the coastwise and export trade.

Mr. Buchanan was one of the first men in the industry to develop an export market for natural gasoline. He has been an exponent of the idea that the industry must diversify and expand its markets through manufacturing special products. According to his views since the present natural gasoline market is subject almost entirely to demands for blending natural gasoline and refined products anything accomplished in diversifying or expanding the demand in other channels will benefit the natural gasoline industry.

The company plans to use the lighter hydrocarbons such as butane and propane in new lines. In addition to its export and coastwise trade the company will market the conventional grades of natural gasoline in tank cars.

WESTERN OPERATORS TO HOLD ANNUAL BANQUET

A banquet to take the place of the annual meeting is announced for November 14 by the California Natural Gasoline Association. The banquet will be held at the Biltmore Hotel, Los Angeles, Calif., at 7 p.m. Those desiring to make reservations are requested to get in touch with assistant secretary of the association at 733 Higgins building, Los Angeles.

Due to the fact that the association holds meetings monthly it was decided to do away with the two-day annual meeting this year. It is probable that the two-day meetings will be held biennially. H. S. Cole, Jr., of The Texas Company of California, is chairman of the publicity committee for the association.

COMPLETE STABILIZING PLANT

HOUSTON, Tex., Oct. 28.—The new stabilizing plant of the Phillips Petroleum Co. on the Houston Ship Channel is virtually completed and will probably be put in operation within the next 10 days. Construction of the plant, which consists of a Tulsa type fractionating tower and auxiliary equipment, has been in charge of J. K. Gibson.

In addition to an 80,000-bbl. breather tank, a 25,000-bbl. storage tank and two 10,000-bbl. spheroid tanks, there are 80 smaller storage tanks. A 30-car loading rack has been completed for handling incoming gasoline.

LOCATION OF REHEATER IN STILL IMPORTANT FACTOR IN OPERATION

By George F. Burdick
C. F. Braun & Co.

Aside from the absorber, the heart of the modern gasoline plant is in the still. The other apparatus such as exchangers, preheaters, coolers, condensers, etc., merely serve as heat conveyors or transfer vessels. Their duty is to exchange heat with the smallest expenditure of energy; that is pressure drop which represents pumping head.

The function of the still is to strip the absorption oil of gasoline using the smallest possible amount of agitation steam. To attack this problem we must recognize two fixed conditions.

1. That a definite pressure is desired and is necessary in order to condense the gasoline produced.

2. That it costs very little more to carry a high oil temperature than to carry a low temperature in the still.

Most of the heat will form a recycle through the interchangers. The effluent oil temperatures from the exchanges will remain practically constant. The only limit in temperature is reached when the heating medium, saturated steam, reaches such high pressures that boiler installations, steam lines and their maintenance costs become prohibitive.

Still Design

This paper will not be of a technical nature, but merely an outline of conclu-

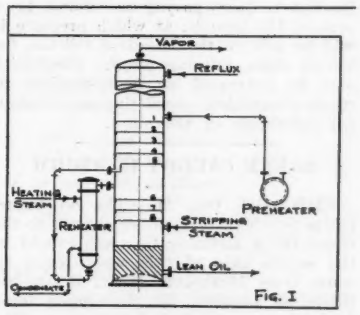
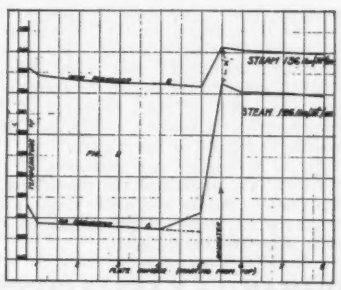


FIG. 1

sions we have reached based upon various data obtained from tests on actual field installations. Figure 1 shows an outline of the bottom or stripping section of the last still tested. The still is 60 inches in diameter by approximately 42 feet in height. It contains 16 trays, eight in the stripping section as shown and eight in the fractionating section above the feed nozzle. The trays are of standard bubble cap design and are spaced on 18-inch centers. This apparatus was designed for a circulation of 320,000 gallons of absorption oil and a gasoline production of 30,000 gallons per 24 hours. The reheater shown in Figure 1 has approximately 250 square feet of heating surface. The preheater is of similar design and size. The stripping steam was introduced below the bottom tray and above the oil level.

*Meeting of California Natural Gasoline Association.



The temperature gradients shown by Curves A, B, C and D, Figures 2 and 3, indicate that relatively small quantities of vapors are formed in the reheater.

Figure 2 shows temperature gradients through the stripping trays with and without the use of a preheater. The reheater was used in both cases.

Curve "A" shows the temperature of the oil before entering the still was 266 degrees Fahrenheit. The reading on Tray 1 shows a drop in temperature of 8 degrees Fahrenheit, which was due to vaporization or flashing of a portion of the gasoline from the fat oil. This vaporization was caused by two things; a decrease in actual pressure from the oil pipe to the still, and the lowering of partial pressure due to the presence of steam in the still. The latent heat of vaporization was drawn from the sensible heat of the liquid and vapors.

From Trays 1 to 4 (all readings were taken in vapor spaces above the trays) we find there was a slight drop in temperature, some 3 degrees Fahrenheit in 4 trays. Tray 5 showed an increase of 8 degrees Fahrenheit, while there was a rise of 62 degrees Fahrenheit in the reheater. The rise of 8 degrees Fahrenheit between plates 4 and 5 indicates that considerable vapors were formed in the reheater and travelled through the gas or vapor risers of Plate 5. These vapors in turn heated the liquid and vapors on Plate 5. We observe, however, that the effect does not carry above Plate 4. In other words, no appreciable amount of vapors were formed on Plate 5. The dotted line indicates what the temperature would have been had no appreciable amount of vapors passed through from below Plate 5.

Point "X" indicates a reading taken in the oil returning to the still from tre reheater. Tray temperatures 6, 7 and 8 were taken in vapor spaces. This gradient shows a drop of only one-half degree Fah-

(Continued on Page 140)

PHILLIPS OUTPUT NEARS 800,000 GALLONS DAILY

The natural gasoline production of the Phillips Petroleum Co. is fast approaching 800,000 gallons daily according to an official report of the company. The company, which for several years has been the largest manufacturer of natural gasoline, has been increasing its production steadily through the construction of new plants and the enlargement of operating plants.

According to company officials an increasing quantity of natural gasoline is being used in the manufacture of "Phillips 66" and "Phillips 66 Ethyl." The first-named product is the ordinary grade of gasoline sold at Phillips filling stations and to jobber accounts. The company first introduced this product to the trade about two years ago. It contains an exceptionally large quantity of natural gasoline for the purpose of increasing the volatility of the motor fuel. The product has been well received by consumers. The "Phillips 66 Ethyl" uses "Phillips 66" as the base fuel with sufficient tetraethyl lead to secure the antiknock rating required by the Ethyl Gasoline Corp. The company has increased its company-owned marketing facilities until now it owns approximately 600 bulk and retail stations.

As a by-product of its natural gasoline plant operation, the Phillips company through a subsidiary known as the Philfuels company has been marketing what are commonly known as liquefied gases. These consist of the lighter hydrocarbons which are fractionated out of the natural gasoline. These gases are being used as domestic and industrial fuels and also for the enrichment of artificial gas. The sale of these special fuels by the Phillips company for the quarter ending October 1 totaled 1,150,000 pounds.

The Phillips company is a large seller of natural gas, a substantial part of which is the residue gas from the gasoline plants. These sales totaled 123,000,000 cubic feet the first nine months of this year. In the Texas Panhandle area the company has also become interested in the manufacture of carbon black, the product being manufactured with the residue gas from the gasoline plants.

MIDLAND TO BUILD PLANT

The Midland Oil Co. has announced plans for the construction of an oil absorption plant in the Eastland oil pool 6 miles northwest of Coleman, Tex. The plant will have four units and will be completed in 60 days.

A PRACTICAL SUGGESTION

STAINLESS STEEL

In choosing a material for use in the construction of equipment, thought must be given not only to its corrosion resisting qualities, but also to the material's mechanical characteristics as well. There is no material available which will resist all forms of corrosion. One or more materials, however, are particularly adapted to each individual type of corrosion. Stainless steel is being used for bubble caps on absorbers in high sulphur areas, for trimming valves, for liners in compressors and many other places in our present gasoline plant equipment.

Stainless steels are those containing cromium and although first made up 15 years ago, they have not been extensively used until the last three or four years. Because of their relative newness much of the information given on them is more or less contradictory and the purpose of this short article is to give only a few generalizations that are fundamental. These steels come on the market under several brand names such as Ascoloy, Enduro, Nichrome, Nirosta, Sweetaloy, etc.

Three Classifications

Stainless steels can be accurately classified into three general groups, each group having very little in common one with another. Each group is characterized by certain properties common to all steels coming in that group but modified considerably by the percentage of carbon and chromium and to a lesser extent upon the amounts of manganese, silicon, copper, aluminum, tungsten and molybdenum. It does not follow, therefore, that steels in the same classification are interchangeable in their application and de-

(Continued on Page 131)

Practical suggestions by those connected with the construction and operation of natural gasoline plants are invited. Payment will be made as soon as suggestions are accepted. Address all communications to the Natural Gasoline Department, The Oil and Gas Journal, Tulsa.

Brief Items for Petroleum Refiners

J. W. Tryon Resigns As General Manager Of Gulf Refineries

John W. Tryon, general manager of the Gulf Refining Co. at Port Arthur, Tex., with a record of 25 years continuous service with that company has resigned effective December 15. He will be succeeded by George L. Prichard, formerly of the Port Arthur refinery but more recently connected with the general offices of the company at Pittsburgh.

A Pennsylvanian by birth, Mr. Tryon was first connected with the refining business for a period of 12 years at Philadelphia. He moved to Port Arthur in 1904 to become purchasing agent of the Gulf Refining Co. He was appointed manager of the plant in 1906 and in 1929 became general manager. During the period he was connected with the company he saw the refinery grow from a small topping plant to its present position of being the largest single refinery of the petroleum industry with a rated capacity of 125,000 bbls. daily. In addition to the Port Arthur refinery the Gulf company operates plants at Marcus Hook, Pa., Bayonne, N. J., Fort Worth and Sweetwater, Tex.

"My resignation is the result of a conclusion reached years ago that any one connected with an industrial institution for a considerable period should, after he has reached the age of 50, and on acquiring what, in his opinion is a competence, retire so that he may have an opportunity to put in his remaining good years in a manner in which he can give expression to his personal ideas, and at the same time make way for those following him in the business." Mr. Tyron said, "This does not mean, however, that I am going to quit work. I expect to continue in a line of active employment, but one that will not require the close attention that I have always felt necessary in the operation of a refinery."

It was also announced by the Gulf management that John G. Glasgow, chief engineer will be transferred to Pittsburgh to succeed Mr. Prichard. W. A. Slater will continue as superintendent of the Port Arthur refinery.

WILLIAMS LEAVES JOHNSON

CHICAGO, Oct. 26.—George H. Williams, manager of the marketing department of the Johnson Oil Refining Co., in charge of tank car sales, has announced his resignation to take effect on November 1. Mr. Williams came to the Chicago offices of the company about six years ago from Pittsburgh, Pa., where he had been in charge of the branch office of the Johnson Oil Refining Co., succeeding Al Hickey, who had resigned to accept the position of vice president of the former Taxman Refining Co., distributors of Cosden products. Herman Jones, who succeeded Mr. Williams as manager of the Pittsburgh office, has recently been transferred to Chicago and placed in charge of the retail distribution of the Johnson company.

TO BID ON FUEL OIL

CHICAGO, Oct. 26.—The Sanitary District is asking for bids to supply its sewage disposal plants with fuel oil. The grade of oil called for is 18-22 gravity with a sulphur content of not over 1.5 per cent. The initial bid is for 500,000 gallons to be delivered to its two plants at the rate of three cars each day. Bids will be opened for the first awarding on November 4, at 10 o'clock a.m., at Room 700, 910 South Michigan Avenue, Chicago.

FELL URGES INDEPENDENT OIL BRANCHES TO UNITE

CHICAGO, Ill., Oct. 24.—H. B. Fell, vice president of the Independent Producers Association of America in the final meeting of the Independent Oil Men of America which held its annual convention here this week at the Stevens Hotel urged all the independent branches of the oil industry to work together in solving their problems of mutual interest. Mr. Fell was not in favor of one independent organization but thought that a union of independent associations could be formed.

Mr. Fell also spoke in favor of a tariff on crude oil brought into this country. He declared that this was necessary to protect the entire industry.

H. B. Floyd, attorney for the Independent Oil Men of America on the final day of the three-day meeting explained the status of the "Red Hat" trademark situation. The Standard Oil Co. of Indiana has been contesting the use of this trademark by independent jobbers alleging that it is an infringement on the "Red Crown" trademark of that company. Mr. Floyd expressed confidence that with changes recently made in the design the trademark would receive the final approval of the patent office. A hearing will be held next month in regard to the matter.

L. S. Westcoat, vice president of the Pure Oil Co. explained the provisions of the Code of Ethics and urged those in attendance to make all provisions of the code effective immediately.

DISMANTLE KANSAS CITY'S FIRST DRIVE-IN STATION

The first drive-in filling station that was built in Kansas City, Mo., is now being dismantled by the Independent Oil & Gas Co., which acquired the station last year when the company absorbed the properties of the Manhattan Oil Co., the operator of a large chain of stations in Kansas City and vicinity.

The station was built in 1912 at 1720 Grand avenue by Alex A. Smith. Mr. Smith, who was not at that time engaged in the oil business, conceived the plan of building a drive-in station after noting the inconvenience of curb pumps to motorists. The first station was highly successful and if formed the nucleus of the Monark Gasoline and Oil Co., which was operating 66 stations when it was taken over by the Manhattan company in 1920. The station's business due to its unfavorable location has dwindled to the point where the Independent company decided to salvage the station equipment and surrender the lease.

TO TEST GASOLINE TAX

CHICAGO, Oct. 26.—Attorney General Carlstrom has written to the 104 oil companies in the State who have been paying their gasoline tax since August 1 under protest, asking them to select a test case which can be pushed to a final decision. Several briefs have been filed attacking the legality of the law for various causes and the first hearing will come before the Circuit Court at Springfield on November 4. The decision of this court probably will be appealed to the Supreme Court of the State whatever the decision in the initial suit may be.

ENTERS JOBBING FIELD

CHICAGO, Oct. 26.—E. J. McGonigle has purchased an interest in the Boyle Oil Co., of Fifty-fifth Street and Justine Avenue, this city, and has been made secretary of the company which operates filling stations in that district of the city. Mr. McGonigle has been recently representative of the Burford Oil Co.

STANDARD CONTRACTS FOR LARGE SUPPLY OF STEAM

The Louisiana Steam Products, Inc. of Baton Rouge, La., has contracted to furnish the steam and electric power requirements of Standard Oil Co. of Louisiana in the operation of its refinery at Baton Rouge. Construction work on the plant which will cost approximately $6,000,000 will start immediately and it is expected that it will be completed about July 1, 1930.

The contract agreement which is unusual in several respects provides that the Louisiana company will use sludges and waste gas from the refinery as fuel. Natural gas will be used for the rest of the plant's requirements.

The main purpose of the Engineers Public Service plant will be to supply over 6,000,000,000 pounds of steam annually to the large refining plant of the Standard company. The plant will also generate all the electricity needed by the refining plant for its operation and will produce a surplus which will be sold to several subsidiaries of Engineers Public Service in adjacent territory.

The electric generating plant will have 60,000 horsepower capacity and will produce about 260,000,000 kilowatt hours annually, about half of which will be used by the refining plant, and the remainder sold to the Baton Rouge Electric Co., the Gulf States Utilities Co., and other public service systems.

Steam will be generated at a pressure of 650 pounds per square inch and put through turbines having an exhaust pressure of 135 pounds, at which pressure it will be sold to the Standard Oil Co. for use in their refining plant. Electricity will be generated as a by-product of steam production, permitting an economical utilization of the plant.

BARGE CAUGHT IN STORM

CHICAGO, Oct. 26.—The oil barge, Cities Service No. 2, under charter to the Globe Oil & Refining Co., was caught in the severe gale of this week while en route from Muskegon, Mich., to the refinery at Lamont, Ill., and broke loose from the tug which had it in tow. The crew of two was saved by a passing freighter. The barge itself drifted until Thursday afternoon, when it was sighted about 4 miles off Indiana Harbor and towed into port and found in good shape.

MIXTURE NOT PATENTABLE

WASHINGTON, D. C., Oct. 26.—A mixture of gasoline, benzol and toluol as a motor fuel is held to be unpatentable by the Court of Customs and Patent Appeals, thus affirming a decision of the Commissioner of Patents in refusing to allow claims of the applicant Lawrence F. Magness.

The opinion of the court was rendered by Judge Lenroot, who reviews the art under consideration at considerable length.

ATLANTIC BUYS EMPIRE

The Atlantic Refining Co. has purchased the marketing properties of the Empire State Oil Co. at Binghampton, N. Y. The properties consists of a bulk station, three service stations and 35 dealer accounts.

DELONG WITH VISCOSITY

CHICAGO, Oct. 26.—R. J. DeLong, formerly with the Pierce Petroleum Corp. of St. Louis, Mo., is now sales manager with the Viscosity Oil Co. of this city, lubricating oil compounders.

MANY IMPROVEMENTS AT INDEPENDENT REFINERY

OIL CITY, Pa., Oct. 26.—The Independent Refining Co. of this city, which has made several changes and additions to its local refinery during the past year, has completed plans for further improvements. The crude oil capacity of the plant was recently increased and other divisions of the plant operation are now to be enlarged.

A new filter house is to be built adjoining the present unit. The new filter house will have double the capacity of the old equipment. A new elevating and conveying system for the filter house with a shuttle conveyor will be installed to handle the fuller's earth.

A new 10-unit retort for restoring fuller's earth will be installed. This equipment will be housed in a new building built of steel and concrete. An entirely new boiler house is to be erected. It will be of fireproof brick with steel frames and wired glass windows. It will have a precast concrete slab roof. There will be underfed stokers providing for efficient operation. On the roof will be a tank which will hold 150 tons of coal. The fuel will be picked up by an elevator and delivered into the tank. From there it will be conveyed to the stokers. Everything will be operated with automatic control.

The boiler house will contain two 500-horsepower boilers which will replace five old return tube boilers.

APPOINTMENTS MADE BY UNION OIL COMPANY

LOS ANGELES, Calif., Oct. 26.—V. H. Kelly, who has served the Union Oil Co. of California as chairman of the sales committee, has been appointed manager of domestic distribution according to an announcement by R. D. Matthews, vice president of the company. Mr. Kelly takes over a new position in the Union organization and will also serve as chairman of the distribution committee.

Several other appointments were announced by Mr. Matthews. A. C. Galbraith has been appointed assistant to the vice president. He has been engaged in special sales work. Other appointments are: J. M. Geary, manager refined oil sales; W. L. Standard, manager lubricating oil sales; E. Power, manager properties and facilities; J. B. Arthur, manager fuel oil and asphalt sales; William Groundwater, manager marine and railroad transportation, and D. C. Forker, manager advertising and publicity.

WINN HEAD SALES

A. F. Winn for several years traffic manager of the Skelly Oil Co. has been appointed manager of the newly created sales department of the company. Under the direction of Mr. Winn the company has launched a nation wide campaign for the sale of special brands of aviation gasoline and motor oils.

Mr. Winn expects to use a Spartan airplane for transportation in the sale of the products. The Spartan airplane is manufactured by a subsidiary company of the Skelly company.

JOINS PETERSON COMPANY

E. J. Youngberg, manager of the Chicago office of the Transcontinental Oil Co., has resigned effective November 1. He will join the George C. Peterson Co. in charge of a newly created lubricating oil department. Mr. Youngberg's successor has not been announced.

EASTERN MARKETS SHOW STEADY TONE

(Continued from Page 127)

it develops, may force the market under the $1.05 level.

Export Markets

Eastern refiners have been in receipt of a good volume of export inquiry on motor fuel this week, but owing to the sold-up condition of the gasoline market in the East, some of this business has been diverted elsewhere. However, two sales were reported, one of 8,000 tons and the other 6,000 tons, both to French accounts. One of the leading interests here is reported to have bought between 75,000 and 100,000 bbls. of gasoline from California during the week to fill an export order which it had on its books. Eastern companies with subsidiaries or refining divisions in the Southwest have been passing on export business to those sources. and considerable gasoline, which would otherwise pass out of Atlantic Coast ports, is now slated for shipment through the Gulf.

No cargo gasoline inquiries were reported in the Gulf market during the week. Export buyers, it appears, are waiting to see what effect the California crude oil price cut will have on offerings of California gasoline, and the export trade looks for an early revival of interest on the part of France and other European countries.

Kerosene has likewise been a rather quiet article at the Gulf, in so far as cargo business is concerned. A substantial volume of small-lot sales in kerosene, the whole going to make up a heavy aggregate total, is reported to have been placed, however.

Lub oil export movement is holding up fairly well, but the volume of new business is not extensive. More inquiries are in the market, however, and an early revival in buying interest is looked for.

Little export interest in fuel and gas oils has been reported during the week, either locally or at the Gulf, and the same holds true of Diesel oil as well.

Paraffin waxes and petrolatum have both met with routine export demand during the week, with the market on the former article showing further evidence of strength.

Petroleum Exports

The following table shows principal exports of refined petroleum products from New York during the past three weeks (all figures in gallons unless otherwise noted):

	Week Ended		
	Oct. 19	Oct. 12	Oct. 5
Gasoline	46,400	112,000	162,000
Naphtha	1,627,400	555,300	661,000
Kerosene	81,300	83,100	22,000
Fuel oil	2,000	6,000	15,000
Lubricating oil	1,122,200	1,608,400	1,448,000
Petrol'm, refined	606,100	2,478,100	2,148,000
	Pounds		
Petrolatum	.....	.....	43,000
Paraffin wax	2,346,500	1,676,300	2,798,000
Refined	225,500	.....	296,000
Scale	503,600	213,000	294,000
Lubric'tg grease	1,233,900	1,450,800	1,791,000

Petrolatum

A slight easing-off in the spot position on lower grades was noted this week under rather stiff selling competition and continued routine demand. Dark green was available at 1⅞ cents per pound, off 5 points from the previous quoting of 1.90 cents per pound. Amber was offering at 3½ cents per pound, a reduction of one-eighth cent, and extra amber was down one-quarter cent at 3⅝ cents per pound.

The white grades, however, continued to show a steady undertone, and were unchanged in price. Demand from pharmaceutical manufacturers remained fairly consistent and in addition there was a little export inquiry for the white grades. Refiners are carrying a good amount of contract business for these grades on their books, and are not inclined to force sales at the expense of prices.

California Oil Receipts

Receipts of California crude and refined oils at Atlantic and Gulf ports for the week ended October 19 totaled 836,000 bbls., a daily average of 119,429 bbls., compared with 441,000 bbls., a daily average of 63,000 bbls. for the previous week and a daily average of 74,929 bbls. for the four weeks ended October 19. Details follow:

	Bbls. of 42 gals.
At Atlantic Coast Ports—	
Boston	50,000
New York	422,000
Philadelphia	292,000
Others	72,000
Total	836,000
Daily average	119,429
Daily average four weeks	74,929
Distribution of total California oil receipts was as follows:	
Gasoline	623,000
Gas oil	163,000
Kerosene distillate	50,000

There were no receipts of California refined oils at Gulf ports during the week.

Included in the week's shipments from Los Angeles for the Atlantic seaboard were the following:

To Baltimore—79,000 bbls. of gasoline on the Dean Emery.

To New York—80,000 bbls. of gas oil on the Atlas; 78,000 bbls. of gasoline on the Paul Shoup; 74,500 bbls. of Diesel oil on the Betterton, and 97,000 bbls. of gasoline on the Sylvan Arrow.

Heavier receipts of all California refined products are looked for as the result of the lowering of California crude prices, the reduction in crude costs giving Pacific Coast refiners a much broader margin to work on and putting them in a much stronger competitive condition in the principal eastern markets.

Imports

Imports of crude and refined oils at the principal United States ports for the week ended October 19 totaled 2,221,000 bbls., a daily average of 317,286 bbls., compared with 1,833,000 bbls., a daily average of 261,857 bbls. for the previous week and a daily average of 308,929 bbls. for the four weeks ended October 19. Details follow:

	Bbls. of 42 gals.
At Atlantic Coast Ports—	
Baltimore	65,000
New York	1,594,000
Philadelphia	245,000
Others	156,000
Total	2,060,000
Daily average	294,286
At Gulf Coast Ports—	
Galveston district	71,000
New Orleans and Baton Rouge	90,000
Total	161,000
Daily average	23,000
At all United States Ports—	
Total	2,221,000
Daily average	317,286
Daily avge. four weeks	308,929

CHICAGO MARKETS SHOWING NO ACTIVITY

(Continued from Page 126)

and to some in it, that the average refiner does not particularly care for industrial fuel business. And the way orders are filled tends to confirm this viewpoint, for there is so much complaint over the quality of the fuel oil supplied that it can only suggest that some refiners just want to move the oil out of their plants and do not care whether they fill specifications or not.

There have been so many more rejections of late that there is much talk concerning them. One explanation is that the seller regards the price as so low that he feels that the oil will stick no matter how far removed it is in quality from what the buyer ordered. Some refiners who have enjoyed an enviable reputation for the uniform quality of their material have delivered cars mixed in with cars of good oil, that were so bad as to merit the instant rejection which they received.

The demand for the higher gravities of fuel oil such as are wanted for burner fuel, that is the 26-28 and 28-30 zero, low sulphur oils have been in less demand but the scarcity of offerings maintains the price range.

Changes Seen in Fuel Oil Business

The fuel oil business is going through a change owing to changes in refining methods and some of the residual oils from the most modern methods seem to have "all the good qualities squeezed out of them."

The local situation is peculiar. Right now there is but one dependable local source for 18-22 fuel oil to the average dealer. Another refiner has some oil of this gravity but he limits the deliveries. The first named refiner is making hay in October by asking 75 cents for his 18-22 fuel oil. It is rather high in sulphur, being run from Muskegon crude.

The Shell people still are out of the market here for any quantity of fuel oils or furnace oils with possibly minor and more or less temporary exceptions. On the other hand consumers with a large volume of consumption are receiving material freely on contracts and at prices which are lower than the present markets. The November requirements of the month-to-month buyers so far as made known are of a routine nature. The Sanitary District is in the market for 500,000 gallons of 18-22 fuel oil to be delivered to their sewerage disposal plants at the rate of three cars daily. This is the first time that the Sanitary District has sought open bids but the system of sewerage treatment will make this a permanent demand for this grade of oil.

The lubricating oil demand is rather light. Motor oils are quiet and industrial lubs are bought so largely on contracts that much of the business does not come upon the open market although the volume is necessarily large. Bright stocks are firmly held and in continued demand. Other stocks are quiet.

Interest in Tank Wagon Situation

Much interest is shown in the tank wagon situation. Recent crude changes in California and elsewhere have again revived reports of an impending tank wagon change in this territory. So far as can be learned, there is no immediate change in prospect and the indications are that jobbers and all distributors who are prospering as a result of the present tank wagon range can continue to be thankful until after Thanksgiving Day, that is, there will not be any large change for another 30 days unless there is some new devlopment. The gallonage generally is well ahead of last year but the increase is going largely to the major distributors. They have increased the number of their outlets by both purchase and construction of new stations. Price conditions are probably better. There are some bad spots in the territory but they are decreasing rather than increasing and the cutting is not general nor for the most part material.

The action of the major companies in striving to ignore the price cutter has not advertised to the trade or to the general public, that there is anything out of the ordinary going on. The furnace oil distributors having made their first fills, are now waiting for the demand which will develop with colder weather. In the meantime local distributors have been advancing their prices, but as the large companies have not advanced their prices the new rates are hard to get. The Standard Oil Co., has not changed its prices on distillates but recently reduced the minimum quanity required at a single delivery and its lowest price is now based on deliveries of 350 gallons instead of 800 gallons as formerly. This is not a price cut but is a concession to the users of small quantities.

REFINERY LABOR PAID HIGH SCALE OF WAGES

(Continued from Page 123)

refining was maintained near a peak for all time to date.

Reviewing the average wages paid labor in the different refining areas, the Pacific Coast is seen to show the highest average. The average there is 57.4 cents. The lowest average is shown for the East South Central states, including Kentucky and Tennessee, which is 32.5 cents. The averages for other geographic divisions follow: New York, New Jersey and Pennsylvania, 46.3 cents; Illinois, Indiana, Ohio and Michigan, 51.4 cents; Kansas and Missouri, 50 cents; Maryland, South Carolina, Georgia, Virginia and West Virginia, 40.3 cents, and the States of Oklahoma, Texas, Arkansas and Louisiana, 42.5 cents.

A PRACTICAL SUGGESTION

(Continued from Page 129)

tailed information on a particular steel's properties should be secured from its manufacturer.

Group 1

Composition—Chromium less than 14 per cent, carbon less than 0.4 per cent, may contain small amounts of other alloying materials. The steel is magnetic.

Heat Treatment—Can be hardened, tempered or drawn.

Toughness—Not brittle even under impact.

Hot Working Qualities—Readily forged, pierced or rolled.

Cold Working Qualities—Can be cold drawn into wire, cold rolled, bent formed, upset or coined.

Machined — Machined readily with proper tools.

Welded—Can be welded by either acetylene or electric arc.

Corrosion—Resistance to weather and water very satisfactory.

Group 2

Composition—Chromium more than 16 per cent, carbon less than 0.4 per cent, may contain small percentage of other alloying metals. The steel is magnetic.

Heat Treatment—Heat treatment not recommended, naturally soft

Toughness—Low impact resistance not dependable for bolts.

Hot Working Qualities—May be forged or pierced.

Cold Working Qualities—Can be cold drawn into wire, rolled, bent formed, upset or coined but not as easily as Group 1.

Machined—Machined readily with properly designed tools.

Welded—Can be welded with either acetylene or electric arc.

Corrosion—Possesses corrosion resisting properties superior to Group 1.

Group 3

Composition—Contains enough chromium and nickel to make steel austenitic and now magnetic. Usually contains twice as much chromium as nickel or vice versa.

Heat Treatment—Does not respond to heat treatment.

Toughness—Extremely tough at all times and thoroughly dependable for all kinds of shock service.

Hot Working Qualities—May be forged, rolled or pierced. Becomes work-hardened progressively below 1,800 degrees Fahrenheit.

Cold Working Qualities—Can be cold drawn but work-hardens twice as fast as Group 1.

Machined—Very difficult to machine.

Welded—Very excellent material for welded products.

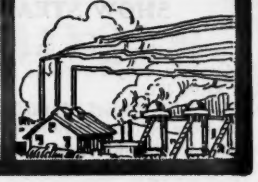
Corrosion—Dependent upon chromium content.

YATES POOL ESTIMATED 500,000 BARRELS DAILY

In the Yates Pool today there is an estimated potential production in excess of 5,000,000 bbls. of oil per day. This potential production was divided among 18 companies, of which 8 have only nominal production. It should be understood that an estimate like this is reached on the basis of what the field would show if the existing pressure were maintained when all the wells were opened up. Such an assumption, says the Lamp, is, of course, contrary to experience. "If sustained production averaged 10 per cent of this figure, or 500,000 bbls. per day, it would meet expectations. Under the policy of regulation which has been in effect there is being produced in the entire field but 130,000 bbls. of oil—less than 3 per cent of the potential production. The field is apparently not suffering by this curtailment. Without proration there would be unavoidably an enormous waste of oil which some day will be wanted. It does not affect the economics of the situation nor reflect upon the splendid spirit shown by the producers to argue that without restrictions the field could not develop anything like its estimated potential production for any length of time."

REFINERY AND CRUDE PRICES

Quotations on refined products are for interstate or export movement unless otherwise noted.



GASOLINE AND NAPHTHA

OKLAHOMA (Group 3)—	Oct. 29		Oct. 22		Oct. 15	
50-52 450 endpoint	.07	.07½	.07	.07½	.07	.07½
56-58 450 endpoint	.06¾	.07¼	.06¾	.07¼	.06¾	.07¼
*58-60 437 endpoint (U. S. Motor)	.0761		.0773		.0775	
*60-62 437 endpoint	†.0775		.07625		†.07½	.08
*60-62 400 endpoint	.0785		.08		.08	
*64-66 375 endpoint	†.08		.08375		.0837	
68-70 360 endpoint	.08	.08¼	.07¾	.08¼	.07¾	.08¼
64-66 437 endpoint (blend)	.07¼	.07½	.07¼		.07¼	

*Weighted average prices October 28, 21 and 14 as reported by representative refiners. Sales to jobbers only. †No sales reported.

NORTH TEXAS—						
56-58 450 endpoint	.06¾	.07	.06¾	.07	.06¾	.07
58-60 460 endpoint	.06¾	.07	.06⅝	.06¾	.06⅝	.06¾
58-60 437 endpoint (U. S. Motor)	.06⅞	.07¼	.06¾	.07¼	.06¾	.07¼
60-62 400 endpoint	.07¼	.07⅜	.07⅛	.07¼	.07⅛	.07¼
64-66 390 endpoint	.07½	.07⅝	.07⅜	.07½	.07⅜	.07½
64-66 375 endpoint	.07¾	.08	.07⅝	.07¾	.07⅝	.07¾
68-70 360 endpoint	.08	.08¼	.07¾	.08	.07¾	.08
64-66 437 endpoint (blend)	.07¼	.07½	.07¼	.07½	.07¼	.07½
*NORTH LOUISIANA—						
58-60 437 endpoint (U. S. Motor)	.07½	.07⅝	.07½	.07⅝	.07¼	.07¾
*ARKANSAS—						
58-60 437 endpoint (U. S. Motor)	.07½	.07⅝	.07½	.07⅝	.07¼	.07¾
PENNSYLVANIA—						
52-54 Naphtha	.07¾	.08	.07¾	.08	.07¾	.08
54-56 Naphtha	.07¾	.08	.07¾	.08	.07¾	.08
58-60 Gasoline	.08½	.09	.08½	.09	.08½	.09
60 Gasoline	.08¾	.09	.08¾	.09	.08¾	.09
62 Gasoline	.08⅞	.09	.08⅞	.09	.08⅞	.09
64 Gasoline	.09¼	.09½	.09¼	.09½	.09¼	.09½
68-70 350 endpoint gasoline	.10¼	.10½	.10¼	.10½	.10¼	.10½
CALIFORNIA						
58-60 437 endpoint (U. S. Motor) domestic	.09	.10	.09	.10	.09	.10
CHICAGO DISTRICT (Based on Group 3)—						
50-52 450 endpoint (Naphtha)	.07	.07½	.07	.07⅜	.07	.07¼
56-58 450 endpoint	.06⅞	.07½	.06¾	.07¼	.06¾	.07¼
58-60 437 endpoint (U. S. Motor)	.07	.07½	.06¾	.07¾	.06⅞	.07¾
60-62 400 endpoint	.07⅝	.07¾	.07¼	.07¾	.07⅝	.07¾
64-66 375 endpoint	.07⅞	.08½	.07⅝	.08	.07⅝	.08
68-70 360 endpoint	.08⅜	.08½	.08	.08¼	.08	.08¼
64-66 437 endpoint (blend)	.07¼	.07½	.07¼	.07⅜	.07¼	.07⅜
GULF COAST (Export)—						
58-60 (U. S. Motor)	.08½		.08½		.08½	
60-62 400 endpoint	.09½		.09½		.09½	
61-63 390 endpoint	.09¾		.09¾		.09¾	
64-66 375 endpoint	.10		.10		10.	

*Louisiana, Arkansas, Mississippi and East Texas delivery.

NATURAL GASOLINE

OKLAHOMA (Group 3)—	Oct. 29		Oct. 22		Oct. 15	
Grade A, 72-79.9, 375 e. p., rec. 90%	.06¾		.06¾	.06⅞	.06½	.06⅝
Grade AA, 80-87.9, 375 e. p., rec 90%	.06¾		.06¾	.06⅞	.06½	.06⅝
Grade B, 76-83.9, 375 e.p., rec. 85%	.06⅝	.06¾	.06¾		.06⅜	.06½
Grade BB, 84-92, 375 e.p., rec. 85%	.06⅝	.06¾	.06⅝	.06¾	.06⅜	.06½
Grade C, 80-90, 375 e.p., rec. 78%	.06½	.06⅝	.06½	.06¾	.06⅜	.06½
NORTH TEXAS—						
Grade A, 72-79.9, 375 e. p., rec. 90%	.06¾		.06¾	.06⅞	.06½	.06⅝
Grade AA, 80-87.9, 375 e. p., rec. 90%	.06¾		.06¾	.06⅞	.06½	.06⅝
Grade B, 76-83.9, 375 e.p., rec. 85%	.06⅝	.06¾	.06⅝	.06¾	.06⅜	.06½
Grade BB, 84-92, 375 e.p., rec. 85%	.06⅝	.06¾	.06⅝	.06¾	.06⅜	.06½
Grade C, 80-90, 375 e. p., rec. 78%	.06⅝		.06½	.06⅝	.06⅜	.06½
NORTH LOUISIANA—						
Grade AA, 80-87, 375 e.p., rec. 90%	.07	.07¼	.07	.07¼	.06¾	.07
Grade BB, 84-92, 375 e. p., rec. 85%	.07		.07		.06¾	
Grade C, 80-90, 375 e. p., rec. 78%	.07		.07		.06¾	
CALIFORNIA—						
75-78 375-390 endpoint	.07¾	08¼	.07¾	.08¼	.07¾	.08¼
CHICAGO DISTRICT (Based on Group 3)—						
Grade A, 72-79.9, 375 e. p., rec. 90%	.06¾		.06¾		.06⅝	
Grade AA, 80-87.9, 375 e. p., rec. 90%	.06¾		.06¾		.06⅝	
Grade B, 76-83.9, 375 e. p., rec. 85%	.06¾		.06¾		.06½	
Grade BB, 84-92, 375 e. p., rec. 85%	.06⅝		.06⅝	.06¾	.06½	
Grade C, 80-90, 375 e. p., rec. 78%	.06⅝		.06½	.06⅝	.06½	

BURNING OIL

OKLAHOMA (Group 3)—	Oct. 29		Oct. 22		Oct. 15	
41-43 water white kerosene	.04¾	.05¼	.04¾	.05¼	.04¾	.05¼
42-44 water white kerosene	.05¼	.05¾	.05¼	.05¾	.05¼	.05¾
NORTH TEXAS—						
41-43 water white kerosene	.04½	.04¾	.04½	.04¾	.04½	.04¾
40-42 water white kerosene	.04⅜	.04½	.04⅝	.04⅝	.04⅜	.04⅝
*NORTH LOUISIANA—						
41-43 water white kerosene	.05½		.05½		.05½	
*ARKANSAS—						
41-43 water white kerosene	.05½		.05½		.05½	
PENNSYLVANIA—						
43 Kerosene prime white	.06¾	.07	.06½	.06¾	.06¼	.06½
45 Kerosene water white	.07	.07¼	.07	.07¼	.06½	.06¾
46 Kerosene water white	.07	.07¼	.07	.07¼	.06¾	.07
47 Kerosene water white	.07¼	.07½	.07¼	.07½	.07	.07¼
300 Mineral Seal	.07¼	.07½	.07¼	.07½	.06¾	.07
CALIFORNIA—						
38-40 water white Kero. (high-burning test)	.05	.05½	.05	.05½	.05	.05½
Engine distillate, 43-44, 445 endpoint	.07	.07½	.07¾	.08¼	.07¾	.08¼
Engine distillate, 42-44, 480 endpoint	.06¾	.07¼	.07½	.08¼	.07½	.08¼
CHICAGO DISTRICT (Based on Group 3)—						
41-43 water white kerosene	.04½	.05	.04¾	.05	.04¾	.05¼
42-44 water white kerosene	.05⅛	.05¼	.05⅛	.05⅜	.05¼	.05½
GULF COAST (Export)—						
41-43 prime white	.07		.07		.07	
41-43 water white	.08		.08		.08	

*Louisiana, Arkansas, Mississippi and East Texas delivery.

FUEL OIL

OKLAHOMA (Group 3)—	Oct. 29		Oct. 22		Oct. 15	
Below 18 Fuel Oil, per bbl.	.60	.65	.60	.65	60	.62½
18-22 Fuel Oil, per bbl.	.65	.70	.65	.70	.62½	.67½
20-22 Fuel Oil, per bbl.	.67½	.72½	.67½	.72½	.65	.70
22-26 Fuel Oil, per bbl.	.75	.80	.75	.80	.75	.80
24-26 Fuel Oil, per bbl.	.80	.85	.80	.85	.80	.85
26-30 Fuel Oil, per bbl.	.90	1.00	.90	1.00	.90	1.00
28-30 Fuel Oil, per bbl. (industrial)	1.10	1.15	1.10	1.15	1.05	1.15
32-36 Gas Oil (industrial)	.03	.03⅛	.03	.03⅛	.03	.03⅛
32-36 Gas Oil (straw color)	.03⅛	.03¼	.03⅛	.03¼	.03⅛	.03¼
36-38 Distillate	.03⅞	.04⅛	.04	.04⅛	.03⅞	.04
38-40 Straw Distillate	.04	.04¼	.04⅛	.04¼	.04	.04¼
NORTH TEXAS—						
Below 20 Fuel Oil	.60	.65	.60	.65	.60	.65
24-26 Fuel Oil, per bbl.	.70	.75	.70	.75	.70	.75
32-36 Gas Oil (straw)	.02⅞	.03⅛	.02⅞	.03⅛	.02⅞	.03⅛
38-40 Straw Distillate	.04	.04⅛	.04	.04⅛	.03⅞	.04⅛
*NORTH LOUISIANA—						
18-20 Fuel Oil, per bbl.	.80	.90	.80	.90	.80	.85
30-32 Gas Oil	.03½	.03¾	.03½	.03¾	.03¼	.03½
*ARKANSAS—						
33-36 Distillate	.03¾	.04	.03¾	.04	.03½	.03¾
30-32 Gas Oil	.03½	.03¾	.03½	.03¾	.03	.03¼
16-22 Refinery Fuel Oil, per bbl.	.80	.90	.80	.90	.70	.75
GULF COAST (South Texas)—						
Gas Oil	.04	.04¼	.04	.04¼	.04	.04¼
Bunker C Fuel (cargo lots), per bbl.	.75		.75		.75	
Bunker C Fuel (small lots)	1.00	1.05	1.00	1.05	1.00	1.05
PENNSYLVANIA—						
30-34 Fuel Oil	.04½	.04¾	.04⅜	.04½	.04⅜	.04½
36-40 Fuel Oil	.04¾	.05	.04⅜	.04¾	.04⅜	.04¾
CALIFORNIA						
33-36 Distillate	.03½	.04	.03½	.04	.03½	.04
26-32 Distillate	.02	.02½	.02	.02½	.02	.02½
15-20 Fuel Oil, Bunker (at tide water)	.65	.85	.65	.85	.65	.85
15-20 Fuel Oil (cargo lots), per bbl.	.70	.85	.70	.85	.70	.85
27 plus Diesel, per bbl.	.90	1.05	.90	1.05	.90	1.05
CHICAGO DISTRICT (Based on Group 3)—						
22-26 Fuel Oil, per bbl.	.77½	.82½	.77½	.82½	.80	.85
18-22 Fuel Oil, per bbl.	.67½	.72½	.67½	.72½	.65	.70
28-30 Fuel Oil, per bbl.	1.10	1.15	1.10	1.15	1.10	1.15
32-36 Gas Oil (zero)	.03⅛	.03¼	.03⅛	.03¼	.03½	.03⅞
32-36 Gas Oil (industrial)	.03	.03⅛	.03	.03⅛	.02⅞	.03⅛
36-38 Distillate	.03¼	.03¾	.03⅝	.03⅞	.03¾	.03⅞
38-40 Straw Distillate	.03¾	.04	.03⅞	.04	.04	

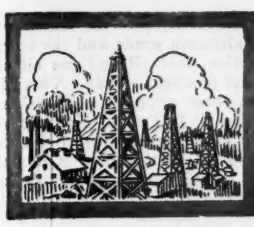
*Louisiana, Arkansas, Mississippi and East Texas delivery.

LUBRICATING OIL AND WAX

OKLAHOMA (Group 3)—	Oct. 29		Oct. 22		Oct. 15	
100 vis., 2 color, 20-25 cold test	.06¾	.07	.06¾	.07	.06¾	.07
100 vis., 3 color, 20-25 cold test	.05¾	.06	.05¾	.06	.05¾	.06
150 vis., 3 color, 20-25 cold test	.07¾	.08	.07¾	.08	.07¾	.08
150 vis., 4 color, 20-25 cold test	.07½	.07¾	.07½	.07¾	.07½	.07¾
180 vis., 3 color, 23-28 cold test	.09¼	.09½	.09¼	.09½	.09¼	.09½
180 vis., 5 color, 23-28 cold test	.08½	.08¾	.08½	.08¾	.08½	.08¾
200 vis., 3 color, 23-28 cold test	.09¾	.10	.09¾	.10	.09¾	.10
200 vis., 4 color, 23-28 cold test	.09¼	.09½	.09¼	.09½	.09¼	.09½
200 vis., 5 color, 23-28 cold test	.08¾	.09	.08¾	.09	.08¾	.09
240 vis., 3 color, 25-30 cold test	.13¼	.13½	.13¼	.13½	.13¼	.13½
240 vis., 4 color, 25-30 cold test	.12¼	.12½	.12¼	.12½	.12¼	.12½
240 vis., 5 color, 25-30 cold test	.11¾	.12	.11¾	.12	.11¾	.12
280 vis., 5 color, 25-30 cold test	.15¾	.16	.15¾	.16	.15¾	.16
280 vis., 4 color, 25-30 cold test	.14¾	.15	.14¾	.15	.14¾	.15
280 vis., 5 color, 25-30 cold test	.13¾	.14	.13¾	.14	.13¾	.14
Cylinder Stocks:						
600, steam refined, light green	.10½	.12	.10½	.12	.10½	.12
600, steam refined, dark green	.09½	.11	.09½	.11	.09½	.11
190-200 vis., D color Bright Stock	.41	.42	.41	.42	.41	.42
150-160 vis., D color Bright Stock	.37		.37		.37	
150-160 vis., E color Bright Stock	.33	.35	.33	.35	.33	.35
Waxes:						
124-126 White Crude Scale Wax	.03		.03		.03	.03⅛
PENNSYLVANIA—						
34 Neutral	.07½	.07¾	.07½	.07¾	.07½	.07¾
34 Sundebloom	.07½	.07¾	.07½	.07¾	.07½	.07¾
36 Miners' Neutral	.07¼	.07½	.07¼	.07½	.07¼	.07½
150, 3 color	.15½	.16	.15½	.16	.15½	.16
180, 3 color	.21½	.22	.21½	.22	.21½	.22
200, 3 color	.24½	.25	.24½	.25	.24½	.25
220, 3 color	.28½	.29	.28½	.29	.28½	.29
600, steam refined	.26½	.27	.25½	.26	.25½	.26
635, steam refined	.29½	.30	.28	.28½	.28	.28½
650, steam refined	.30½	.31	.29½	.30	.29½	.30
600, Pennsylvania Flash	.31½	.32	.31½	.32	.31½	.32
630, Pennsylvania Flash	.36	.36½	.36	.36½	.36	.36½
600, E filtered	.33	.33½	.33	.33½	.33	.33½
600, D filtered	.36½	.37	.36½	.37	.36½	.37
Pennsylvania Bright Stock	.50	.51	.51½	.52	.52	.52½
*122-124 White Crude Scale Wax	.03¼	.03½	.03¼	.03½	.03¼	.03½
*124-126 White Crude Scale Wax	.03¼	.03½	.03¼	.03½	.03¼	.03½

*At New York.

GULF COAST (South Texas)—						
No. 2 color, 100 vis., pale oil	.05¾	.06½	.05¾	.06½	.05¾	.06½
No. 3 color, 200 vis., pale oil	.09		.09	.09½	.09	.09½
No. 3 color, 300 vis., pale oil	.09¾	.10	.09¾	.10¼	.09¾	.10¼
No. 3½ color, 500 vis., pale oil	.11	.11½	.11½	.12	.11½	.12
No. 4 color, 750 vis., pale oil	.12	.13	.12½	.13	.12½	.13
No. 5 to 6 color, 200 vis., red oil	.07½	.08	.08	.08½	.08	.08½
No. 5 to 6 color, 300 vis., red oil	.08½		.08¾	.09¼	.08¾	.09¼
No. 5 to 6 color, 500 vis., red oil	.09	.10	.09½	.10	.09½	.10
No. 5 to 6 color, 750 vis., red oil	.11¼	.11½	.11¾	.12¼	.11¾	.12¼
No. 2½ color, 200 vis., pale filtered	.11	.12	.11	.12	.11	.12
No. 2½ color, 300 vis., pale filtered	.12	.13	.12	.13	.12	.13
No. 2½ color, 500 vis., pale filtered	.14½	.15	.14½	.15	.14½	.15
No. 2½-3 color, 750 vis., pale filtered	.17	.19	.17	.19	.17	.19



REFINERY AND CRUDE PRICES

Quotations on refined products are for interstate or export movement unless otherwise noted.

	Oct. 29		Oct. 22		Oct. 15	
CALIFORNIA—						
130 vis., 2½-3 color	.10¼	.10½	.10¼	.10½	.10¼	.10½
200 vis., 2½-3 color	.11½	.11¾	.11½	.11¾	.11½	.11¾
300 vis., 3-3½ color	.13	.13½	.13	.13½	.13	.13½
350 vis., 3½-4 color	.13½	.13¾	.13½	.13¾	.13½	.13¾
400 vis., 3½-4 color	.15	.15½	.15	.15½	.15	.15½
Red Neutral:						
200 vis., 4½-5 color	.11	.11¼	.11	.11¼	.11	.11¼
300 vis., 5-6 color	.12	.12¼	.12	.12¼	.12	.12¼
400 vis., 5-6 color	.13¼	.14	.13¼	.14	.13½	.14
500 vis., 4½-5 color	.14¼	.15½	.14¼	.15½	.14¼	.15½
500 vis., 5-6½ color	.15	.15¼	.15	.15¼	.15	.15¼
600 vis., 6½ plus color	.16	.16¼	.16	.16¼	.16	.16¼

Note—Bright stocks are not manufactured commercially on the Pacific Coast.

NEW YORK (BAYONNE) REFINERY PRICES

	Oct. 29		Oct. 22		Oct. 15	
Gasoline, U. S. Motor, 58-60, 437	.08¾	.09	.08¾	.09	.08¾	.09
Kerosene, water white, 41-43	.07¾		.07¾		.07¾	
*Fuel Oil, Bunker "C," 14-16, per bbl.	1.05		1.05		1.05	
†Fuel Oil, Diesel, 28-30, per bbl.	2.00		2.00		2.00	
Gas Oil, 32-36 gravity	.05¼		.05¼		.05¼	
25 pale Paraffin Oil	.10½		.10½		.10½	
32 pale Paraffin Oil	.07¼		.07¼		.07¼	
285 red Paraffin Oil	.11½		.11½		.11½	
250 red Paraffin Oil	.11		.11		.11	
225 red Paraffin Oil	.09½		.09½		.09½	
200 red Paraffin Oil	.09		.09		.09	
Refined Wax:						
120-122 a.m.p., per lb.	.04½		.04½		.04	
125-127 a.m.p., per lb.	.04⅜		.04⅜		.04¼	
130-132 a.m.p., per lb.	.05½		.05½		.05½	
133-135 a.m.p., per lb.	.06⅛		.06⅛		.06⅛	
135-137 a.m.p., per lb.	.06¼		.06¼		.06¼	
Petrolatum in barrels, carload lots, per pound:						
Dark Green	.01⅞		.019		.019	
Amber	.03½		.03⅝		.03⅝	
Extra Amber	.03⅝		.03⅞		.03⅞	
Cream	.06⅜		.06⅜		.06⅜	
Lily White	.07⅜		.07⅜		.07⅜	
Snow White	.08⅜		.08⅜		.08⅜	

*Lighterage 5.0 cents a barrel extra. †Lighterage 6.5 cents a barrel extra.

NEW YORK (BAYONNE) EXPORT PRICES

	Oct. 29	Oct. 22	Oct. 15
Kerosene, prime white	.07¾	.07¾	.07¾
Kerosene, water white	.09	.09	.09
600, steam refined cylinder stocks, in bbls.	.30½	.30½	.30
635, steam refined	.32½	.32½	.32
650, steam refined	.36½	.36½	.36
600, Pennsylvania Flash	.43	.43	.43
630, Pennsylvania Flash	.47	.47	.47
600, Warren E	.42	.42	.42
600, Oil City, E	.41	.41	.41
Light 140-150 Bright Stocks	.60 .61	.60 .61	.60 .61
Dark 140-150 Bright Stocks	.58 .59	.58 .59	.58 .59

LOS ANGELES EXPORT PRICES

	Oct. 29	Oct. 22	Oct. 15
Kerosene, water white	.04½ .05	.04½ .05	.04½ .05
U. S. Motor Gasoline, 53-55, 437 e.p.	.06¼ .06¾	.06½ .07	.06½ .07

CRUDE OIL PRICES

OKAHOMA, KANSAS, NORTH AND EAST CENTRAL TEXAS

Corsicana heavy (January 11)* ..... .80
Other fields.....See gravity table

*Posted by Magnolia Petroleum Co.

TEXAS PANHANDLE

Gray County, Wheeler County and Carson-Hutchinson Counties—See gravity table.

WEST TEXAS

Iatan*.....Same as North Texas
Crane-Upton-Crockett, Pecos, Winkler, Mitchell and Glasscock—See gravity table
Chalk† ..... .65

*Includes Howard County and Westbrook Fields.
†Posted by Humble Oil & Refining Co.

ARKANSAS-NORTH LOUISIANA

Smackover, below 24 gravity (May 20, 1929) .....$ .85
Smackover, 24 gravity and above (May 20, 1929) 1.00
Cotton Valley, below 36 gravity (May 22) ..... .85
Bellevue (May 29, 1929) 1.30
Urania (May 21, 1929) 1.10
East El Dorado (May 22, 1929) ..... .85
Other fields.....See gravity table

Cotton Valley crude above 36 gravity takes same gravity price schedule as shown for North Louisiana and Arkansas crude in Mid-Continent gravity price table.

Note—Smackover, Cotton Valley and Bellevue posted by Standard Oil Co. of Louisiana and Magnolia Petroleum Co.; Urania posted by Louisiana Oil Refining Corp.; East El Dorado, Magnolia Petroleum Co.

GULF COAST

Grade A (May 20)* $1.30
Grade B .....See gravity table
Jennings, La. (March 14)† 1.05
Saratoga, Batson, Dayton (March 14, 1927)‡ 1.20
Refugio¶ ..... .70
Markham (March 14)§ 1.00
High Island (December 14)¶ 1.00

*Humble Oil & Refining Co., The Texas Company, Gulf Pipe Line Co., and Sun Pipe Line Co. †Gulf Pipe Line Co. ‡Sun Pipe Line Co. §The Texas Company.
¶Posted by Gulf Pipe Line Co.

ROCKY MOUNTAIN STATES
Ohio Oil Co.-Midwest Refining Co.
(Effective May 21, 1929)

Rock Creek, Wyo. $1.40
Salt Creek.....See gravity table
Big Muddy 1.43
Grass Creek, heavy (July 27, 1928) .... .90
Grass Creek, light 1.65
Mule Creek 1.20
Elk Basin 1.65
Lance Creek 1.68
Poison Spider (March 14, 1927)..... 1.00
Notches (March 14, 1927) ..... .65
Rex Lake (February 22) 1.10
Osage 1.65
Lost Soldier (contract, May 22) 1.05
Hamilton Dame (March 14, 1927) ..... .85
Pedro 1.25
Greybull 1.65
Four Bear ..... .85
Cat Creek (Montana) (July 27, 1928).. 1.48
Sunburst (Montana) (May 23, 1929) ... 1.78
Torchlight 1.65
Hogback (New Mexico) 1.70

Note—Salt Creek, Osage, Cat Creek, Greybull and Hogback posted by Midwest Refining Co., and the remainder by the Ohio Oil Co. Both companies post Grass Creek light and Elk Basin.

SOUTH CENTRAL AND SOUTH-WESTERN TEXAS

Luling (May 2)* .....$ .90
Mirando (May 20, 1929)† ..... .90
Salt Flat (May 20, 1929)§ 1.25
Rockdale Minerva (April 15) Below 28 gravity 1.25

(Continued on Page 134)

CRUDE OIL GRAVITY TABLE

Gravity	Okla., Kans. N. C. Texas 1	No. La. and Arkansas 2	Crane, Upton, Crockett, Winkler, Howard, Pecos, Texas crudes, and Lea, N. Mex. 3	Stephens, Ark. 4	Wheeler (Texas Panhandle) 5	Gray County (Texas Panhandle) 6	Carson and Hutchinson (Texas Panhandle) 7	Salt Creek, Wyo. 8	Grade B and Light Crude (G. Coast) 9	Somerset (South Central Texas) 10
24 and above	....	....	....	....	....	....	....	....	....	....
Below 24	....	....	....	....	....	....	....	....	....	....
Below 25	.85	....	.70	....	....	....	....	....	1.15	....
25 to 25.9	.90	....	.74	....	....	....	....	....	1.18	....
26 to 26.9	.95	....	.78	....	....	....	....	....	1.21	....
27 to 27.9	1.00	....	.82	....	....	....	....	....	1.24	....
Below 28	....	1.00	....	.90	.90	.90	.90	....	....	....
28 to 28.9	1.05	1.05	.86	.94	.90	.90	.90	....	1.27	....
29 to 29.9	1.10	1.10	.90	.98	.90	.95	.90	1.10	1.30	....
30 to 30.9	1.15	1.15	.94	1.02	.95	1.00	.90	1.15	1.33	....
31 to 31.9	1.20	1.20	.98	1.06	1.00	1.05	.90	1.20	1.36	....
32 to 32.9	1.25	1.25	1.02	1.10	1.05	1.10	.95	1.25	1.39	1.05
33 to 33.9	1.30	1.30	1.06	....	1.10	1.15	1.00	1.30	1.42	1.07
34 to 34.9	1.35	1.35	1.10	....	1.15	1.20	1.05	1.35	1.45	1.09
35 to 35.9	1.40	1.40	1.14	....	1.20	1.25	1.10	1.40	1.48	1.11
36 to 36.9	1.45	1.45	1.18	....	1.25	1.30	1.15	1.45	....	1.13
37 to 37.9	1.50	1.50	....	....	1.30	1.35	1.20	1.50	....	1.15
38 to 38.9	1.55	1.55	....	....	1.35	1.40	1.25	....	....	1.17
39 to 39.9	1.60	1.60	....	....	1.40	1.45	1.30	....	....	....
40 to 40.9	1.65	1.65	....	....	1.45	1.50	1.35	....	....	....
41 to 41.9	1.70	1.70	....	....	1.50	1.55	1.40	....	....	....
42 to 42.9	1.75	1.75	....	....	1.55	1.60	1.45	....	....	....
43 to 43.9	1.80	1.80	....	....	1.60	1.65	1.50	....	....	....
44 and above	1.85	1.85	....	....	1.65	1.70	1.55	....	....	....

Column 1, Note—Magnolia Petroleum Co. posted schedule May 20, 1929, making price below 26 gravity 70 cents per barrel, 26-26.9 gravity 75 cents, 27-27.9 gravity 85 cents, 28-28.9 gravity 90 cents, 29-29.9 gravity 95 cents, 30-30.9 gravity $1.05, and 31-31.9 gravity $1.15, with balance of the price schedule as shown above.

Oklahoma—Carter Oil Co., Prairie Oil & Gas Co., Sinclair Oil & Gas Co., Gypsy Oil Co., The Texas Company, May 20.

North Central Texas—Including Ranger, Mexia, Powell, Richland, Wortham, Lytton Springs, Currie, Nocona and Moran, Prairie Oil & Gas Co., Sinclair Oil Refining Co., Humble Oil & Refining Co., The Texas Company and Gulf Refining Co., May 20.

Kansas—Prairie, Sinclair, The Texas Company and Carter, May 20.

Column 2—Arkansas and North Louisiana—(Caddo, Bull Bayou, Crichton, Cotton Valley, above 36 gravity, DeSoto, Haynesville, Homer and El Dorado only) May 22. Standard Oil Co. of Louisiana, Louisiana Oil Refining Co., Gulf Refining Co., Magnolia Petroleum Co., schedule applies to Pine Island, Haynesville, Bull Bayou, Louisiana and El Dorado, Ark., light crude.

Column 3—Humble Oil & Refining Co. and Magnolia Petroleum Co., May 20.

Column 4—Atlantic Oil Producing Co., Prairie Oil & Gas Co., Louisiana Oil Refining Corp., May 21, 1929.

Columns 5, 6 and 7—Humble Oil & Refining Co., Magnolia Petroleum Co., May 20, 1929.

Column 8—Midwest Refining Co., May 20, 1929. All crude over 37 gravity $1.50 per barrel.

Column 9—Humble Oil & Refining Co., May 20, 1929 (schedule ends 35 and above).

Column 10—Grayburg Pipe Line Co. and Pioneer Oil & Refining Co., April 7.

CALIFORNIA CRUDE OIL PRICES

Standard Oil Co.-Union Oil Co. (Effective October 21, 1929)

Gravity—	Salt Lake, Newport, Summerland, Lawndale, Los Angeles, Fullerton, Richfield, Torrance, Olinda-Brea, Alamitos Heights, Huntington Beach, Signal Hill, Seal Beach 1	Athens, Inglewood, Rosecrans-Dominguez, Watsonville 2	Whittier, La Habra, Coyote Hills 3	Midway-Sunset, Elk Hills, Lost Hills, Belridge, Buena Vista Hills 4	Montebello 5	Santa Fe Springs 6	Santa Maria, Coalinga 7	Wheeler Ridge, Fruitvale 8	Orcutt, Ventura, Rincon 9	Ventura Ave.* Potrero† 10	Elwood Terrace 11	Coalinga 12
14 to 14.9	.70	.70	.50	.70	....	.50	.50	.65	.40	....	....	....
15 to 15.9	.70	.70	.50	.70	....	.50	.50	.65	.40	....	....	....
16 to 16.9	.70	.70	.50	.70	....	.50	.50	.65	.40	....	....	....
17 to 17.9	.70	.70	.50	.70	....	.50	.50	.65	.40	....	....	....
18 to 18.9	.75	.75	.56	.70	....	.56	.56	.70	.40	....	....	....
19 to 19.9	.80	.80	.62	.75	....	.62	.62	.70	.40	....	....	.40
20 to 20.9	.85	.84	.68	.80	....	.68	.68	.70	.40	....	....	.40
21 to 21.9	.89	.88	.74	.85	.40	.74	.74	.86	.40	....	....	.40
22 to 22.9	.93	.91	.80	.90	.40	.80	.80	.87	.40	....	....	.40
23 to 23.9	.97	.94	.85	.95	.40	.85	.85	.90	.40	....	....	.40
24 to 24.9	1.01	.97	.90	.98	.40	.88	.88	.94	.40	....	....	.40
25 to 25.9	1.05	1.00	.95	1.01	.40	.91	.91	.98	.60	....	....	.60
26 to 26.9	1.09	1.04	1.00	1.04	.40	.94	.94	1.02	.60	....	....	.60
27 to 27.9	1.13	1.08	1.05	1.07	.40	.98	.97	....	.60	....	....	.60
28 to 28.9	1.17	1.12	1.10	1.10	.40	1.02	....	....	.60	....	....	.60
29 to 29.9	1.21	1.16	1.16	1.13	.60	1.06	....	....	.60	....	....	.60
30 to 30.9	1.25	1.20	1.22	1.16	.60	1.10	....	....	.60	....	....	.60
31 to 31.9	1.30	....	1.28	....	.60	1.14	....	....	.60	....	....	.60
32 to 32.9	1.35	....	1.34	....	.60	1.18	....	....	.60	....	....	.60
33 to 33.9	1.41	....	1.40	....	.60	1.22	....	....	.60	....	....	....
34 to 34.9	1.47	....	1.46	....	.60	1.26	....	....	.60	1.16	....	....
35 to 35.9	1.53	....	....	....	.60	1.30	....	....	.60	1.22	....	....
36 to 36.9	1.59	....	....	....	.60	....	....	....	.60	1.28	....	....
37 to 37.9	1.65	....	....	....	.60	....	....	....	.60	1.34	....	....
38 to 38.9	1.71	....	....	....	.60	....	....	....	.60	1.40	....	....
39 to 39.9	1.77	....	....	....	.60	....	....	....	.60	1.46	....	....
40 to 40.9	1.83	....	....	....	....	....	....	....	.60	1.52	....	....
41 to 41.9	1.89	....	....	....	....	....	....	....	.60	1.58	....	....
42 to 42.9	1.95	....	....	....	....	....	....	....	.60	1.64	....	....

*October 22.
†Sunset Pacific Oil Co., October 26.

Kern River, Newhall-McKittrick, Mount Poso and Round Mountain 11 to 13.9 gravity 45 cents, 14 gravity and above 50 cents, effective October 2, 1929. On December 1, 1928, the Union Oil Co. posted Midway-Sunset, Elk Hills, Buena Vista, Lost Hills and Coalinga crude as follows: 11 to 13.9 gravity at 45 cents, 14 gravity and above 50 cents.

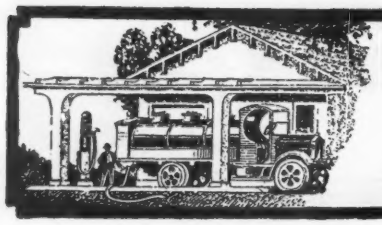
Column 1—Signal Hill, Seal Beach, Huntington Beach and Alamitos Heights crude, 14 to 32.9 gravity, inclusive; Richfield, Olinda-Brea and Fullerton, 14 to 30.9 gravity; Torrance and Inglewood, 14 to 28.9 gravity; Dominguez and Athens-Rosecrans, 24 to 42.9 gravity.

Column 2—Whittier crude, 14 to 22.9 gravity; Coyote Hills, 14 to 30.9 gravity.

Column 3—Kern River, Newhall and McKittrick, 11 to 19.9 gravity; Midway-Sunset, Buena Vista and Elk Hills, 11 to 33.9 gravity; Lost Hills, 11 to 34.9 gravity; oil below 14 gravity posted at 45 cents.

Column 6—Oil below 14 gravity posted at 45 cents.

Columns 8 and 9—Posted by Union Oil Co. only.



TANK WAGON MARKETS

Tank wagon quotations for gasoline and kerosene in United States as furnished by the larger marketing concerns Oct. 29

ALL TANK WAGON AND SERVICE STATION QUOTATIONS INCLUDE TAXES

STANDARD OIL CO (INDIANA)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Chicago dist.†..	19.0	20.0	3.0	13.0
Decatur, Ill. ...	19.2	20.2	3.0	13.1
E. St. Louis ...	18.4	17.4	3.0	12.2
Joliet	19.4	20.4	3.0	13.3
Peoria	19.2	20.2	3.0	13.1
Quincy	19.2	20.2	3.0	12.9
Davenport, Ia...	19.5	20.5	3.0	13.3
Des Moines ...	19.5	20.5	3.0	13.3
Keokuk	19.5	20.5	3.0	13.3
Sioux City	19.1	20.1	3.0	12.9
Duluth, Minn...	20.5	21.5	3.0	13.9
Mankato	20.1	21.1	3.0	13.7
Minneapolis ...	20.2	21.2	3.0	13.9
LaCrosse, Wis..	19.2	20.2	2.0	14.0
Milwaukee	18.1	19.1	2.0	12.9
Madison	18.3	17.3	2.0	13.1
Detroit, Mich...	19.8	20.8	3.0	14.7
Grand Rapids..	19.7	20.7	3.0	14.6
Saginaw	19.9	20.9	3.0	14.8
Evansville, Ind.	20.0	21.0	4.0	14.0
Fort Wayne ...	20.4	21.4	4.0	14.4
Indianapolis ...	20.2	21.2	4.0	14.2
South Bend ...	20.4	21.4	4.0	14.4
Fargo, N. D. ..	21.9	22.9	3.0	15.9
Huron, S. D. ..	21.3	22.3	4.0	14.7
Sioux Falls	20.1	21.1	4.0	14.4
K. C., Mo.*	18.9	19.9	3.0	11.6
Springfield* ...	18.8	19.8	3.0	12.5
St. Louis*	17.9	18.9	2.5	12.3
St. Joseph	18.5	19.5	2.0	12.2
Wichita, Kans..	17.8	18.8	3.0	11.8
Bartlesville, Ok.	18.5	19.5	4.0	11.5

*State tax 2 cents; remainder city tax.

†Effective February 20, discounts on Q.D.A. in Chicago district 2 cents off service station price on purchases of 500 gallons or more per month and 4 cents on purchases of 1,000 gallons or more per month.

NAPHTHA

	Tank wagon	Tank car
Oleum spirits	15.7	12.9
V. M. & P. Naphtha	17.2	13.9
Cleaner's naphtha	17.0	14.9
Stanisol	18.0	15.4

Tank wagon prices f.o.b. Chicago; tank car prices f.o.b. Whiting.

STANOLIND FURNACE OIL IN CHICAGO

Less than 100 gallons	9.0
100 to 349 gallons	8.0
350 gallons or more	7.5

Note—Outside Chicago furnace oil discount of 1 cent per gallon is given on deliveries of 100 to 349 gallons and 1½ cents on deliveries of 350 gallons or more.

The following quantity discounts from the service station price are allowed on monthly sales of gasoline; 2,000 gallons or less, 2 cents; more than 2,000 and less than 6,000 gallons, 2½ cents; more than 6,000 gallons, 3 cents. Discounts are allowed each month and they are not cumulative. Delivery tickets showing date and quantity delivered must be sent to the seller before the tenth of the month to secure the discount on the previous month's purchases.

SOUTHWESTERN DISTRICT

Magnolia Petroleum Co.

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Dallas, Tex. ...	17.0	21.0	4.0	13.0
Fort Worth ...	17.0	20.0	4.0	12.0
Houston	13.0	17.0	4.0	11.0
San Antonio ...	15.0	19.0	4.0	11.0
El Paso	15.0	18.0	4.0	16.0
Texarkana	17.0	19.0	4.0	12.0
Muskogee, Ok.*	16.0	19.0	4.0	13.0
Okla. City* ...	17.0	20.0	4.0	10.0
Tulsa*	15.0	19.0	4.0	10.0
Ft. Smith, Ark.	15.0	17.0	5.0	12.0
Little Rock ...	19.0	21.0	5.0	13.0

*Gasoline tank wagon price to dealers 2 cents under posted tank wagon.

ROCKY MOUNTAIN DISTRICT

Continental Oil Co.

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Denver, Colo....	18.0	21.0	4.0	15.5
Pueblo	18.0	21.0	4.0	15.5
Grand Junction	22.5	25.5	4.0	19.0
Casper, Wyo. ..	20 0	23.0	4 0	14 0
Cheyenne	21.0	24.0	4 0	15 5
Butte, Mont. ..	25.5	28.5	5.0	20.0
Helena	25.5	28.5	5.0	20.0
Salt Lake, Utah	21.0	24.0	3.5	17.0
Albu'que, N. M.	21.0	24.0	5.0	17.0
Boise, Idaho ..	23.5	26 5	4.0	19 0
Twin Falls	23.5	27.5	4.0	19.0

PENNSYLVANIA—DELAWARE AND PART NEW ENGLAND

The Atlantic Refining Co.

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Pittsburgh, Pa..	16.0	*22.0	...	13.0
Philadelphia ...	16.0	*22.0	...	13.0
Scranton	16.0	*22.0	...	13.0
Allentown	16.0	*22.0	...	13.0
Altoona	16.0	*22.0	...	13.0
Erie	13.0	*17.0	...	13.0
Dover, Del.	18.0	21.0	3.0	13.0
Wilmington ...	19.0	21.0	3.0	13.0
Springf'd, Mass.	18.0	20.0	2.0	15.0
Worcester	18.0	20.0	2.0	15.0
Boston	18.0	20.0	2.0	15.0
Providence, R.I.	18.0	20.0	2.0	13.0
Hartford, Conn.	18.0	20.0	2.0	14.0
New Haven ...	18.0	20.0	2.0	15.0

*Includes tax of 4.0 cents. Pennsylvania tax is collected by the dealer and paid by him direct to the State. The Atlantic Refining Co. recognizes a 2-cent per gallon discount on gasoline from its posted tank wagon markets on sales to dealers for purposes of resale. The Atlantic Refining Co. also recognizes a maximum discount of 2 cents per gallon on gasoline to commercial accounts under contract for one year.

NEW YORK AND PART OF NEW ENGLAND DISTRICT

Standard Oil Co. (New York)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Albany, N. Y...	18.0	20.0	2.0	15.0
New York*	16.0	18.0	2.0	15.0
Buffalo	18.0	20.0	2.0	14.0
Rochester	18.0	20.0	2.0	14.0
Syracuse	18.0	20.0	2.0	15.0
Boston, Mass...	18.0	20.0	2.0	15.0
Augusta, Me. ..	20.0	22.0	4.0	15.0
Manch't'r, N. H.	20.0	22.0	4.0	15.0
Burlington, Vt..	19.0	20.0	4.0	15.0

*Prices in steel barrels.

SOUTHERN DISTRICT

Standard Oil Co. (Kentucky)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Atlanta, Ga. ...	20.0	22.0	4.0	16.5
Augusta	20.0	22.0	4.0	15.5
Macon	23.0	25.0	4.0	16.5
Savannah	22.0	24.0	4.0	15.5
Birm'ham, Ala..	19.0	21.0	4.0	13.0
Mobile	20.0	22.0	4.0	15.0
Montgomery ...	21.0	23.0	4.0	16.5
Clarks'le, Miss..	18.0	20.0	5.0	12.5
Jackson	21.0	23.0	5.0	13.0
Natchez	20.5	20.5	5.0	14.0
Gulfport	22.5	24.5	5.0	14.0
Vicksburg	20.5	22.5	5.0	14.0
Jack'ville, Fla..	22.0	24.0	6.0	14.5
Miami	23.0	25.0	6.0	15.5
Pensacola	23.0	25.0	6.0	14.5
Tampa	22.0	24.0	5.0	14.5
Lexington, Ky..	20.0	22.0	5.0	15.5
Covington	20.0	21.0	5.0	15.5
Louisville	21.0	23.0	5.0	15.0
Ashland	18.0	19.0	5.0	15.5
Catlettsburg ...	18.0	19.0	5.0	15.5

In addition to the state tax of 4 cents on gasoline, Montgomery has city tax of 1 cent on gasoline and one-half cent on kerosene. Kerosene prices in Georgia include 1-cent tax. In Florida, an inspection fee of 0.125 cent; in Alabama, an inspection fee of one-half cent on kerosene and one-fourth cent on gasoline. Pensacola and Mobile taxes include 1-cent city levy. Gulfport tax includes privilege tax of 2 cents in addition to state tax.

Effective April 2, price to dealers 2 cents under posted tank wagon price.

PACIFIC COAST TERRITORY

Standard Oil Co. (California)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
San Francisco..	20.0	24.0	3.0	15.5
Los Angeles ..	19.5	23.5	3.0	15.5
Reno, Nev.	24.0	26.0	4.0	19.0
Portland, Ore. .	20.5	24.5	3.0	16.5
Seattle, Wash...	20.5	23.5	3.0	16.5
Tacoma	20.5	23.5	3.0	16.5
Spokane	24.5	27.5	3.0	20.5
Phoenix, Ariz...	18.0	22.0	4.0	20.5

NEBRASKA

Standard Oil Co. (Nebraska)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Omaha	20.25	22.25	4.0	13.25
McCook	21.75	23.75	4.0	14.75
Norfolk	20.75	22.75	4.0	13.75
N. Platte	21.75	23.75	4.0	14.50
Scottsbluff	21.75	23.75	4.0	14.25

ATLANTIC COAST DISTRICT

Standard Oil Co. (New Jersey)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Atlantic City ..	16.0	18.0	2.0	13.0
Newark, N. J...	17.0	19.0	2.0	13.0
Annapolis, Md..	20.0	22.0	4.0	13.0
Baltimore	19.0	21.0	4.0	12.0
Cumberland ...	20.0	22.0	4.0	13.0
Washington ...	17.0	19.0	2.0	12.0
Danville, Va. ..	21.0	23.0	5.0	12.0
Norfolk	20.0	22.0	5.0	13.0
Petersburg	21.0	23.0	5.0	13.0
Roanoke	20.0	21.0	5.0	13.0
Richmond	20.0	22.0	5.0	13.0
Charles'n, W.Va.	19.0	21.0	4.0	13.0
Keyser	20.0	22.0	4.0	13.0
Parkersburg ...	19.0	21.0	4.0	12.0
Wheeling	20.0	22.0	4.0	13.0
Charlotte, N. C.	21.0	23.0	5.0	13.0
Hickory	21.0	23.0	5.0	13.0
Mt. Airy	21.0	23.0	5.0	13.0
Salisbury	21.0	23.0	5.0	13.0
Charleston, S.C.	21.0	23.0	6.0	13.0
Columbia	22.0	24.0	6.0	13.0

A 2-cent per gallon discount off the gasoline tank wagon price is offered to dealers.

OHIO

Standard Oil Co. (Ohio)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Ohio points* ..	19.0	20.0	4.0	†13.0

*Dealers and commercial accounts 2 cents under tank wagon.

†Service station price 15 cents.

CENTRAL SOUTH DISTRICT

Standard Oil Co. (Louisiana)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
N. Orleans, La.*	15.0	15.0	5.0	13.0
Baton Rouge ..	20.0	20.9	4.0	14.5
Alexandria	19.0	21.0	5.0	16.0
Lafayette†	20.0	22.0	5.0	14.0
Lake Charles†..	20.5	22.5	5.0	16.0
Shreveport	19.5	21.5	4.0	15.0
Knoxv'le, Tenn.	18.0	20.0	5.0	16.0
Memphis	20.0	22.0	5.0	12.5
Chattanooga ..	20.0	20.0	5.0	14.0
Nashville	19.0	19.0	5.0	16.0
Bristol	21.0	22.0	5.0	14.0
Lt. Rock, Ark..	19.0	21.0	5.0	13.0

*Tax of 5 cents includes city tax of 1 cent. Louisiana Kerosene prices include 1-cent state tax and 1-cent parish tax.

†Includes 1-cent parish tax.

TANK WAGON CHANGES

October 19—Standard Oil Co. of Louisiana reduced the gasoline tank wagon and station prices 2 cents in Little Rock, Ark., to 19 cents and 21 cents.

October 20—Standard Oil Co. of Louisiana reduced the gasoline station price 2 cents at Chattanooga, Tenn., to 20 cents.

October 21—Standard Oil Co. of Louisiana reduced the gasoline tank wagon price 2 cents to 18 cents.

October 22—Standard Oil Co. of Kentucky reduced the gasoline tank wagon and station prices 1 cent in Covington, Ky., to 20 cents and 21 cents.

October 26—Standard Oil Co. of Louisiana reduced the gasoline station price 2 cents in New Orleans to 15 cents.

October 24—Magnolia Petroleum Co. reduced the gasoline tank wagon and station prices 2 cents in San Antonio, Tex., to 15 cents and 19 cents.

GULF COAST MARKETS IN GENERAL WEAKENING

HOUSTON, Tex., Oct. 29.—Efforts of several sources of supply to move material at any price to get the business has resulted in a general weakening of pale and red oils in the Gulf Coast market. Prices on nearly all grades Tuesday were off from a quarter to a half cent. The weakening was felt greatest in the 500 and 750 viscosity oils due to the seasonal slackening in demand of heavier grades, winter requirements of jobbers necessitating changing over to 200 and 300 viscosity oils. Despite the recent reduction in California crude and the stock market situation, fuel oil and gas oil on the Gulf Coast has held steady. There is no change in these products, with sellers holding Bunker C fuel at a minimum of 75 cents for cargo movements and good grades of gas oil at 4 cents. Although firm, there is very little demand for these products.

SAYS MEXICO IS OIL RESERVE

The drop in Mexican oil production, 193,000,000 bbls. in 1921 to 21,000,000 in the first six months of this year, and the assertion of Ramon de Negri, minister of industry, commerce and labor, that it is due to a decision of American owners to hold the Mexican fields in reserve, instead, as they assert, to excessive taxation, has aroused widespread discussion in Mexico as to the national policies involved. The oil situation also affects Mexico's labor conditions and has a bearing on the pending labor legislation. The leading financial publication, El Economista, says that at the end of 1921, 150,000 men were earning a livelihood from oil, while on June 30, 1929, only 14,000 were employed by the industry.

COSDEN OF ILLINOIS

The Cosden Oil Co., Inc. of Illinois has been organized with a capitalization of $100,000. The company will take over the distributing business controlled by J. S. Cosden in Chicago.

CRUDE OIL PRICES

(Continued from Page 133)

38-38.9 gravity	1.27
39-39.9 gravity	1.29
40 and above	1.31
Thrall‡	...
Callihan (May 15)	1.75
Lytton Springs (Lockhart)	See gravity table
Somerset	See gravity table

*Posted by Magnolia Petroleum Co.
†Magnolia Petroleum Co., Humble Oil & Refining Co., Crown Central Pipe Line Co.
‡Thrall prices same as North Central Texas less 19½ cents per cwt. freight.
§Humble Oil & Refining Co.

EASTERN STATES
Joseph Seep Purchasing Agency
(Effective October 1, 1929)

Penna Grade Oil in New York Transit Lines (New York)	$3.05
Bradford District Oil in National Transit Lines (Pennsylvania)	3.05
Penna Grade Oil in National Transit Lines (Pennsylvania)	3.05
Penna Crude Oil in Southwest Pennsylvania Lines (West Virginia)	3.00
Penna Grade Oil in Eureka Pipe Line Lines (Pennsylvania)	2.90
Penna Grade Oil in Buckeye Pipe Line Lines (Ohio)	2.70
Cabell Grade Oil in Eureka Pipe Line Lines (West Virginia) (May 22, 1929)	1.75
Corning 35-cent Grade Oil in Buckeye Pipe Line Co.'s Line (May 22, 1929).	1.80
Corning 25-cent Grade Oil in Buckeye Pipe Line Co.'s Lines (May 22, 1929).	1.90
Somerset Oil in Cumberland Pipe Line Lines (Kentucky) (May 22, 1929) ...	1.80
Ragland Grade Oil in Cumberland Pipe Line Lines (Kentucky) (Jan. 29) ...	.60

MIDDLE WESTERN STATES
Ohio Oil Co.
(Effective May 21, 1929)

Lima	$1.80
Wooster	1.90
Illinois	1.75
Indiana	1.57
Princeton	1.75
Plymouth	1.28
Waterloo (November 17, 1926)	1.35
Western Kentucky	1.68
Dundee, Mich. (Sept. 17, 1929)‖	
.. Same as Mid-Continent gravity scale	
Upper and Lower Traverse sands, Mich‖	
.....Same as Mid-Continent gravity scale	
Midland, Mich. (June 3, 1929)*	1.70
Saginaw, Mich., Saginaw Sand (February 10)†	1.89
Saginaw, Mich., Berea Sand (February 10)†	1.79
Cumberland, Clay, Barren, Clinton and Monroe Counties, Kentucky, (March 15)‡	1.50
Oil in line in Stoll Oil Refining Co. In Oil City, Ky. (Oct. 7, 1929)§	1.70
Oil Springs (Canada)¶	2.27
Petrolia (Canada)¶	2.20

*Posted by Pure Oil Co.
†Posted by Sun Oil Co.
‡Posted by Paragon Development Co.
§Posted by Stoll Oil Refining Co.
¶Posted by Imperial Oil Co., Ltd.
‖Posted by Standard of Indiana for boat shipment.

MEXICAN CRUDE

Panuco*	$ .630

*Based on September transactions for deliveries during October and December. Price exclusive of taxes.

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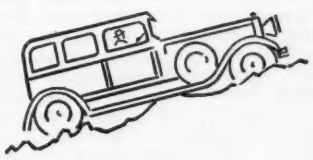

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MOTOR OIL

Oil Shares Dive With Rest of Market

Prices Cut in Two as Stockholders Throw Shares Overboard in Hope of Averting More Severe Losses

Oil shares plunged along with the rest of the stock exchange issues in the debacle which seized the market the last week. Intrinsic values were lost sight of in the wild scramble of security holders to get what they could for their holdings before the quoted values sank still lower. Standard of New Jersey, which touched 83 in the recent bull market, was selling at 56½ Tuesday. Standard of California, which reached 81⅞ a few weeks ago, sank to 53. Prairie Pipe Line, which went up to 65, with prospects of going higher, was thrown overboard at 47. Standard of New York, recently selling at 48⅛, was down to 34½. Mexican Seaboard, with a high of 69⅜ for the year, nose-dived to 13¼. Sinclair hit 20, less than half its recently quoted price.

Notwithstanding the terrific slump, it was pointed out that the oils behaved relatively well in what is described as the worst crash in the history of the Stock Exchange and the belief was expressed that as soon s the inevitable readjustment had started they would be among the first to advance to their legitimate levels. Before the stock exchange closed on Tuesday a decided upturn in prices had set in and better feeling prevailed.

Phillips Petroleum

Phillips Petroleum Co. reports $6,518,780 of earnings in the third quarter, after all charges except depletion and depreciation. For nine months earnings were $15,029,588, compared with $12,366,133 for the same period last year. Current assets are nearly 25 million dollars and current liabilities $5,700,000.

"With supply and demand balanced during the winter months, it appears that the industry will enter the period of high consumption next year in better condition than at any time during recent years of overproduction," the report says.

Transcontinental Oil

Transcontinental Oil Co. reports for quarter ended September 30, 1929, profit of $1,804,271 after interest, depreciation, dry holes, leases and properties abandoned, charged off or provided for by reserve, but before federal taxes, comparing with $1,188,271 in preceding quarter and $825,066 in third quarter of 1928.

Profit for nine months ended September 30 totaled $3,520,093 before federal taxes, against $1,248,032 in first nine months of previous year.

Royal Dutch

Royal Dutch Petroleum Co. has proposed increase in capital to 1,000,000,000 guilders from 600,000,000 guilders. Bond issue has also been authorized, but no offering will be made at present. Action on the proposal will be taken at an extraordinary general meeting of stockholders called for November 6. Some changes in the by-laws are also proposed to be acted upon at that time.

Previously authorized capital of 600,000,000 guilders was divided into 1,000 guilder shares, which were subdivided for convenience into 100 guilder ($40.20) shares. This capital consisted of 570,000,000 guilders of ordinary shares, 28,500,000 guilders of 4½ per cent priority shares and 1,500,000 guilders of 4 per cent preference shares. At present the outstanding amount consists of approximately 495,643,000 guilders of ordinary shares and the total authorized issue of both preference and priority stock.

In November last year ordinary stockholders were offered the right to subscribe at par to the extent of 20 per cent of their holdings for 82,420,600 guilders of ordinary stock, and this offering was fully subscribed.

Holders of New York shares of record November 19 were offered the right to subscribe at $15 a share for New York shares in the ratio of one share for each five shares held, the rights expiring January 2 this year, and on February 19, 1929, a refund of $1.15 on each share subscribed for was made. Three New York shares are equal to each original subshare of 100 guilders.

Rio Grande Oil

Rio Grande Oil Co. and subsidiaries report for quarter ended September 30, 1929, net profit of $1,231,544 after depreciation, depletion, federal taxes, etc., equivalent to $1.01 a share on 1,218,000 shares of no-par stock, comparing with $1,759,037 in the preceding quarter, or $1.44 a share, and $1,263,325, or $1.05 a share on 1,200,000 shares in quarter ended March 31, 1929. Net profit for first nine months of 1929 totaled $4,253,906, equal to $3.50 a share on the 1,218,000 shares of stock.

Consolidated income account for nine months ended September 30, 1929, follows: Profit before charges $6,386,332; depreciation and depletion $1,552,348; federal taxes $580,078; net profit $4,253,906. Sales for the nine months amounted to $16,797,219.

Pierce Petroleum

Pierce Petroleum Corp. and subsidiaries report for quarter ended September 30, 1929, profit of $394,457 after interest, depreciation, depletion, etc., comparing with $453,139 in preceding quarter and $424,225 in September quarter of 1928. No mention is made of federal taxes.

Profit for nine months ended September 30, totaled $878,718 after above charges, against $791,683 in first nine months of previous year. Stocks outstanding amounts to 2,500,000 no par shares.

Pierce Oil Corp. is a holding company and has no income for the nine months ended September 30, 1929.

Penn Mex Fuel

Penn Mex Fuel Co., controlled by South Penn Oil Co., declared a dividend of $1, payable December 14 to stock of record December 5. The last previous dividend was $1, paid September 30.

Buckeye Pipe Line

Bukeye Pipe Line Co. declared regular quarterly dividend of $1, payable December 14 to stock of record November 22.

Standard Oil of Ohio

Standard Oil Co. of Ohio, declared regular quarterly dividend of $1.75 on preferred, payable December 2 to stock of record November 8.

Prairie Pipe Line

Prairie Pipe Line Co. and subsidiary report for nine months ended September 30, 1929, net profit of $17,110,000 after taxes and charges, equivalent to $4.22 a share (par $25) on 4,050,000 shares of stock.

Net profit for the September quarter was $6,135,000 after taxes and charges, equal to $1.51 a share.

Twenty Representative Stocks

The Oil and Gas Journal's weekly average price of 20 representative petroleum stocks listed on the New York Stock Exchange and New York Curb, based on closing quotations for Saturday, was as follows:

May 18	59.30	Aug. 10	54.15
May 25	57.73	Aug. 17	60.32
June 1	56.45	Aug. 24	60.61
June 8	58.37	Aug. 31	60.90
June 14	57.76	Sept. 7	59.16
June 21	56.76	Sept. 14	60.40
June 28	56.70	Sept. 21	57.93
July 5	56.52	Sept. 28	58.63
July 12	55.69	Oct. 5	57.00
July 19	56.83	Oct. 12	59.75
July 26	55.62	Oct. 19	58.70
Aug. 3	55.09	Oct. 26	54.59

Louisiana Oil

Louisiana Oil Refining Corp. and subsidiaries report for nine months ended September 30, 1929, consolidated profit of $1,526,887, after interest, depreciation, depletion, amortization, drilling expenses, etc., but before federal taxes, comparing with $1,137,133 in first nine months of 1928.

For quarter ended September 30, profit totaled $783,613 before federal taxes, against $504,238 in preceding quarter and $549,075 in September quarter of previous year. Capital stock consists of 40,000 shares (par $100) of 6½ per cent preferred and 1,187,628 no par shares of common.

INJUNCTION AGAINST USE OF "STANDARD"

RICHMOND, Va., Oct. 26.—Temporary injunction has been issued in United States district court here restraining Standard Oil Co. of Virginia from continuing business operations under the title "Standard Oil" until further order of the court. Injunction was sought by Standard Oil Co. of New Jersey, which has been doing business in Virginia continuously since 1906.

Standard Oil Co. of Virginia was incorporated two years ago in New York and in September, 1929, in Virginia. While the bill of complaint listed Attorneys W. W. Crump, R. Grayson Dashiel and A. C. Nunnally, all of Richmond, as incorporators of Standard Oil Co. of Virginia, it was explained by Dashiel that the actual incorporators are business men of New York. Local incorporators will have no further connection with the company, Dashiel said, except in a legal way if occasion arises.

Preliminary injunction granted here was the forerunner of actions under way in district courts of South Carolina and West Virginia, where incorporators of Standard Oil Co. of Virginia have organized corporations known respectively as Standard Oil Co. of South Carolina and Standard Oil Co. of West Virginia.

INDEPENDENT OILS ON NEW YORK CURB

Compiled by Francis, Bro. & Co., Kennedy Building, Tulsa, Okla.

1926 High	1926 Low	1927 High	1927 Low	1928 High	1928 Low	1929 High	1929 Low	Par value	Stocks	For week ended October 25: Sales	Open	High	Low	Last	Change
$6.75	.45	2 7/16	.55	1½	.53	.72	3/16	$5	Amer. Con. Oilfields	9,400	¼	¼	¼	¼	...
..	..	7½	2¾	9½	3⅛	8⅝	2⅜	N.P.	Amer. Maracaibo	3,200	3⅛	3⅛	2⅜	2½	— ⅝
..	..	2¾	1	4½	2¼	5	1⅛	$10	Argo Oil	700	1⅜	1⅜	1⅛	1⅛	— ⅜
85¼	60	40	20½	55	32¾	62	45	N.P.	British American	No sales.					
28⅜	9¼	28¼	15½	4½	3⅞	4⅞	1¾	25c	Carib. Syndicate (new)	3,900	2⅛	2¾	1¾	1⅞	— ⅛
..	..	58¾	40¼	90⅞	54	68⅛	28⅛	N.P.	Cities Service	2,289,100	67⅜	67½	45	48½	—22¾
..	..	95⅜	87	103½	94½	98¾	93½	N.P.	Cities Service, pfd.	1,300	94½	94½	93	93	—1¾
3½	1¾	3⅞	1½	3¼	.76	2	⅝	1	Colombia Syndicate	1,100	⅝	¾	⅝	⅝	— ⅛
..	..	9¾	6⅜	8⅞	6¼	11⅛	4¾	10	Consolidated Royalty	300	5	5	4¾	4¾	...
16	10	14⅞	9½	17½	9½	11¾	7⅜	N.P.	Creole Syndicate	30,200	8⅝	8⅝	7⅜	7¾	—1⅛
..	..	3	.50	3¼	.76	2½	⅞	N.P.	Crown Central	No sales.					
7⅞	6¾	12	4	33½	3¼	26	10¼	N.P.	Darby Petroleum	7.300	11⅝	12⅛	10¼	10⅝	—1
..	..	2½	74	2¼	1	11	2	N.P.	Derby Oil & Ref.	6,500	7	7	4⅛	5⅞	—1⅝
..	..	16¾	4	21⅛	7½	44	20⅞	N.P.	Derby Oil & Ref., pfd.	No sales.					
98	92	115	86¼	165	101⅛	209	142⅛	$25	Gulf Oil Corp.	28,100	185⅛	186	158¾	169⅝	—16⅜
$3.00	.83	2½	.80	3⅜	1	2⅞	⅞	5	Intercontinental Pet.	25,500	1¼	1⅝	⅞	1⅛	— ⅛
..	..	2¼	1⅛	3	1¼	3⅝	1⅜	N.P.	Kirby Petroleum	2,600	2⅜	2⅜	2	2⅛	— ⅜
12¼	5¾	10⅞	5⅛	9⅜	5⅛	6⅛	2⅞	25	Leonard Oil & Dev.	5,300	3⅜	3⅜	2	2⅛	—1⅛
27	20	27½	20	43⅞	20	38⅞	23⅛	N.P.	Lion Oil & Ref. Co.	2,800	28½	28½	18	24	—3⅝
46	30	59⅝	37	69⅛	48½	50	32¼	N.P.	Lone Star Gas	6,700	56	56	40	48	—7⅜
2⅞	1	2⅞	.80	1⅞	.50	1¼	¾	1	Magdalena Syndicate	600	⅜	⅜	⅜	⅜	...
34	12½	52	12	48½	32	38½	17¾	N.P.	Margay Oil	400	19	19	17¾	17¾	...
8	5½	12⅛	5	8	2¾	6⅜	3	N.P.	Mexico-Ohio Oil	300	3	3	3	3	...
1¾	1⅛	1½	1	1¾	.76	1½	¾	$1	Mountain & Gulf	1,900	⅞	⅞	¾	¾	— ⅛
26	23	29¼	22¾	28⅞	19½	22⅞	7	10	Mountain Producers	8,700	10¼	10¼	7	9	—1¼
6⅝	5	5⅞	4⅝	5⅝	4¼	5	2½	5	New Bradford	471,200	3	3	2½	2⅞	— ⅛
..	..	16	9¼	11⅞	7⅛	9⅜	4	1	New Mex. & Ariz.	1,900	4½	4½	4	4	...
..	..	12¾	9½	14¼	8½	18½	8¾	N.P.	North Central Texas	1,200	11⅛	11¼	10½	11	— ¼
10⅛	5⅞	9⅜	3¼	6	2⅛	3½	½	N.P.	Pandem	1,400	3/16	⅝	½	3/16	38
12¼	11¾	12⅛	7	15⅝	8½	10¼	4	N.P.	Pantapec Oil	3,000	5	5	4	4¼	— ½
22¾	12	13½	5⅛	7¾	4⅞	7⅜	4⅜	N.P.	Pennok Oil	No sales.					
17	8½	24⅜	7	18	4⅞	16	10	25	Red Bank Oil	400	15¼	15¼	14	15	+ ½
30¼	12	15½	3½	12⅞	4⅛	8½	3	N.P.	Reiter-Foster	2,300	3⅜	3½	3¼	3⅜	— ⅛
7	4½	7	4½	12	4⅛	11	5	N.P.	Ryan Consolidated	600	5¾	5¾	5	5	— ⅞
10	7⅛	8	5¼	7¼	5½	5⅞	1	$10	Salt Creek Cons.	5,700	2½	2⅝	1	2⅝	+ ⅛
35	24⅛	35½	27¼	35	23⅛	25⅞	10½	10	Salt Creek Prod.	9,400	12⅛	12⅞	10½	11	—1½
6⅞	1¼	7	1¾	3½	1	2½	1⅛	5	Savoy Oil	No sales.					
92	63½	92	63½	93¼	75	145	82	100	Transcontinental, pfd.	No sales.					
8	4½	7⅝	4¼	9⅛	4¾	6½	3	5	Venezuelan Petrol	3,500	3¼	3⅜	3	3	— ¾
8⅛	5½	8	4¾	8¼	4⅞	9⅛	4	$1	Woodley Petroleum	200	4	4¾	4	4¾	+ ⅛
6½	6	6	1¾	8⅜	2⅛	2⅞	⅛	25	Y. Oil & Gas (new)	100	1⅛	1⅛	1⅛	1⅛	— ⅛

TRANSACTIONS IN OIL SHARES ON NEW YORK STOCK EXCHANGE

Quotations Compiled by Francis, Bro. & Co., Members of New York Stock Exchange, Kennedy Building, Tulsa, Okla

1926 High	1926 Low	1927 High	1927 Low	1928 High	1928 Low	1929 High	1929 Low		Listed capital	Par value	Div. rate	Last paid	Stocks—	For week ended October 26 Sales	Open	High	Low	Last Change
82⅞	24¼	37⅝	27⅝	43⅞	27⅛	42⅝	22½	(sh)	922,075	N.P.	50cQ	July 31, 29	Amerada Corp.	17,900	26	27	22½	24½ — 2⅜
74	39⅞	82⅛	35⅛	85	51⅛	64¾	20½	(sh)	209,180	N.P.	.....	.....	American Republics Corp.	15,200	34	36⅞	20½	28 — 9
60	44¾	50¼	35	53⅜	37½	47¼	40½		$57,260,300	$25	50cQ	Sept. 30, 29	Associated Oil	12,000	44½	45	44½	45 + ⅜
128⅜	97	131⅜	104	66⅜	50	77⅞	40		50,000,000	25	25cQ*	Sept. 16, 29	Atlantic Refining	286,500	55⅛	56⅜	40	49¾ — 5¼
33½	23½	35½	20¾	53	20	49⅛	20⅞		45,235,650	25	50cQ	Aug. 6, 29	Barnsdall Corp.	120,400	32	32	20⅞	27⅝ — 4¾
..	..	..	..	..	..	47⅛	25½		4,634,532	N.P.	.....	.....	Continental Oil	137,600	36¾	37	25½	32⅛ — 4⅛
94½	50	96¾	65	94⅞	68	94¾	59¾		20,785,400	100	.....	.....	General Asphalt	28,800	80¼	81½	59¾	64⅜ — 8¼
72	50¼	175¾	60⅛	167	79	109	50		25,000,000	100	.....	.....	Houston Oil	41,100	85	86	50	66½—18⅝
34	19⅝	32¾	17⅝	38⅜	21¾	39⅜	25⅛	(sh)	1,333,572	N.P.	50cQ	July 31, 29	Independent Oil & Gas ...	43,100	29⅝	30	25⅛	27½ — 2¾
12¾	7½	12⅛	7⅝	39⅝	9	53	23½		$12,307,370	$10	.....	May 31, 24	Indian Refining	109,000	38¾	39¾	23½	27 —12
25⅞	16½	37¾	20½	39⅛	27⅜	38⅜	25	(sh)	3,992,122	N.P.	.....	May 1, 27	Lago Oil & Transport ...	3,600	29⅝	30	25	29½ — ⅝
19⅞	12	18⅛	10	19¾	9⅜	18	10	(sh)	1,190,063	N.P.	.....	.....	Louisiana Oil Refining ..	42,700	10¾	11¼	10	10¼ — ¾
28	16½	22⅜	12	25½	12½	18½	11⅝	(sh)	330,000	N.P.	.....	.....	Maracaibo Oil	5,500	14	14¼	11⅝	12 — 2
13¾	6	9¼	3	73	4⅝	69⅜	9¼	(sh)	1,276,873	N.P.	.....	Dec. 15, 20	Mexican Seaboard	133,600	23	25¼	9¼	20 — 3
37	20½	39⅜	25½	44½	25⅛	39⅞	29¾	(sh)	1,857,912	N.P.	50cQ	Aug. 15, 29	Mid-Continent Petroleum	53,500	32¾	33	29¾	30⅛ — 2⅞
2½	½	3¾	1⅝	7⅜	2⅜	5⅛	1¾		24,298,850	10	.....	July 1, 23	Middle States	10,600	1⅞	2	1	1⅞ — ⅛
76½	56⅛	65⅞	40⅛	54⅞	38¼	69	40¼		49,997,750	50	.....	Oct. 20, 27	Pan American P. & T. ...	14,200	63	66	58½	64¾ + ¾
78⅜	56⅞	66⅜	40¼	58⅞	37¾	69	40¼		118,034,739	50	.....	Nov. 15, 24	Pan American P. & T. B.	169,200	63⅝	64½	56	64⅜ + ⅝
46	30	37⅛	16¾	28⅝	15½	18½	13⅝	(sh)	400,000	N.P.	.....	Jan. 30, 27	Pan American Western B	No sales.				
32	4½	18⅞	8	21¾	11½	15¼	5	(sh)	199,370	N.P.	.....	.....	Panhandle P. & R.	4,500	7⅛	7⅛	5	5½ — 1⅞
99⅜	51	83	54	108	70	76	47½		$2,635,300	$100	.....	July 2, 23	Panhandle P. & R. pfd. ..	700	49½	55	49½	55 + 2
57⅜	40	60¼	36¼	53⅞	35¼	47	27⅝	(sh)	2,406,796	N.P.	37½cQ	Oct. 2, 29	Phillips Petroleum	122,000	39¾	41	27⅝	37⅛ — 2¾
..	..	1⅛	½	5¼	½	3⅜	1½		$29,622,925	$25	.....	.....	Pierce Oil Corp.	8,600	1¾	1¾	1½	1½ — ¼
7	2¼	5½	2½	7	3½	5⅞	3½	(sh)	2,500,000	N.P.	.....	.....	Pierce Petroleum	13,400	3⅞	3⅞	3⅛	3½ — ⅜
60¼	48	55½	45⅝	68	46	65⅝	49⅛		60,000,000	25	50cQ*	Sept. 30, 29	Prairie Oil & Gas	.....		50⅛	51¼	50	50¼ + ⅝
137½	122½	190	130¾	280	172	65	53⅝		$101,250,000	$25	75cQ*	Sept. 30, 29	Prairie Pipe	.....		57⅞	60	57⅞	59¼ + ¼
20¾	11	33⅞	16¾	29⅞	16	25⅞	4		$37,450,850	$50	.....	Sept. 15, 23	Producers & Refiners	6,400	12	12½	4	9½ — 2¾
41¾	30¾	50	36⅞	49⅝	41	46¾	34		2,845,350	50	37½cQ	May 1, 25	Producers & Refiners pfd.	100	34½	34½	34	34 — 1
81	25¼	33½	25	31⅝	19	30¾	23¼		75,959,350	25	.....	Sept. 2, 29	Pure Oil Co.	90,900	28⅛	28⅝	24¾	26½ — 1⅝
27½	22	28⅝	25⅜	56	23	49⅝	20		1,917,181	20	50cQ*	Aug. 15, 28	Richfield Oil	86,400	37	37	20	32½ — 5
57⅜	47⅜	54½	44¼	64	44⅝	64	49⅞	(sh)	611,303	13.40	.....	Aug. 13, 29	Royal Dutch, N. Y., sh. ..	188,400	60⅜	61	48	55¼ — 4⅝
48⅝	40½	47⅞	41⅝	57½	40⅝	55⅝	43⅜	(sh)	£30,000,000	£1	$1.45	July 23, 29	Shell Transport & T.	No sales.				
31	24	31¾	24⅝	39¼	23¼	31¾	24	(sh)	20,000,000	N.P.	35cQ	Sept. 30, 29	Shell Union Oil	79,400	26⅜	26⅜	24	25⅜ — 1⅛
25⅝	15⅛	25⅝	14¼	27¼	18⅛	40⅛	18⅛		$8,357,000	$10	40cQ	Sept. 14, 29	Simms Petroleum	25,800	30½	30¾	24½	25 — 5⅛
24⅞	15¾	22⅜	15	46¾	17⅜	45	25	(sh)	4,501,915	N.P.	50cQ*	Oct. 15, 29	Sinclair Consolidated	384,200	33⅛	33¾	25	31 — 2⅛
99½	90	104½	97	110	102½	111	107		$16,604,600	$100	$2Q	Aug. 15, 29	Sinclair Consolidated pfd.	800	110	110	109½	109½ + ¼
37⅛	26⅝	37⅜	24⅛	42⅝	25	46½	31		27,396,590	25	50cQ	Sept. 16, 29	Skelly Oil Co.	52,000	37⅞	38¾	31	35 — 3½
63⅝	51½	60¾	50⅜	80	53	81⅞	64	(sh)	12,594,098	N.P.	65½cQ	Sept. 16, 29	Standard Oil of Cal.	119,100	72½	72⅝	65	69¾ — 2⅞
46⅜	37½	41⅜	35⅛	59⅜	37¾	83	48		$611,120,700	$25	25cQ*	Sept. 16, 29	Standard Oil of N. J. ..	817,400	77	79½	61⅝	72¾ — 4¼
47¼	30⅜	34⅛	29¾	44¼	28¾	48⅛	34⅝		427,973,275	25	40cQ	Sept. 16, 29	Standard Oil of N. Y.	209,800	42½	43	34⅝	40 — 2½
41¾	30⅛	34⅞	30	77	31½	84¾	57	(sh)	1,206,073	N.P.	25cQ	Sept. 16, 29	Sun Oil	5,400	81	81	72⅛	73½ — 7⅞
..	..	..	..	..	..	24	9½		2,400,000	N.P.	.....	Dec. 20, 20	Superior Oil Corp.	36,100	17	17¾	9½	14¼ — 3¾
58	48	58	45	74¾	50	71⅞	57¼		$211,076,650	$25	75cQ	Oct. 1, 29	The Texas Corporation ..	71,800	62⅛	63	57¼	58¾ — 3½
19½	12	18⅞	12	26⅝	12⅛	25⅞	11⅜		8,380,340	10	.....	Jan. 3, 28	Texas Pacific Coal & Oil .	26,700	15¼	15⅜	11⅜	14⅛ — 1
39¼	27	29⅛	19	41½	19⅝	40	27⅛	(sh)	2,168,410	N.P.	20cQ	June 29, 29	Tide Water Oil Co.	1,500	32½	32½	29¾	29¾ — 2¼
103	87¼	90⅛	85	100⅛	86	97½	90		$20,705,200	$100	65½cQ	Aug. 15, 29	Tide Wat. O. Co. 5% pfd.	1,400	85¼	85¼	83	84 — 2
27	20⅞	19⅛	15¾	25	14¾	23½	14	(sh)	4,796,158	N.P.	.....	Aug. 1, 27	Tide Water Associated ...	113,300	17½	18	14	15⅝ — 1⅞
5½	3	10⅜	3¾	14⅜	7¼	15¼	6¼	(sh)	6,425,548	$100	.....	.....	Transcontinental Oil	360,900	12	12	6¼	9⅜ — 1¼
58⅜	37¼	56½	39⅝	58	42⅜	57	43⅛		$94,798,100	$25	50cQ	Aug. 10, 29	Union Oil of California ..	37,500	50⅛	51½	43⅝	49½ — 1¾
120⅜	84¼	127½	94	128⅛	110	163¾	121⅞		31,061,200	100	$1.25Q	Sept. 3, 29	Union Tank Car Co.	3,800	150	150	140	140 —10
30⅛	23½	34½	24½	44⅞	26	42⅞	15	(sh)	356,000	N.P.	50cQ	July 2, 29	Warner Quinlan	60,200	27¾	28½	15	23¾ — 4⅞
29¾	25⅛	27½	20	38	20⅛	38	29¾	(sh)	490,000	N.P.	50cQ	July 20, 29	White Eagle Oil & Refg. .	9,200	34	34	29¾	31¾ — 1
..	..	..	..	..	..	29¾	16		.....	....	.....	.....	Wilcox Oil & Gas					

*Also extras. †Ex-dividend.

STANDARD OIL STOCKS ON NEW YORK CURB

														For week ended October 26 Sales	Open	High	Low	Last Change
21	16	21⅝	17⅞	22⅜	14⅞	18	13⅞		£4,126,460	£1	.....	June 6, 28	Anglo-American Oil (vtg.)	600	15¼	15¼	13⅞	14½ — 1
..	..	3¾	¾	5	1¼	2½	1	(sh)	500,000	N.P.	.....	.....	Atlantic Lobos	No sales.				
76	65	69	50	56½	44½	46½	26		$1,000,000	25	$1S.A.*	Apr. 15, 29	Borne Scrymser	50	27½	27½	27½	27½ — ½
59½	42	60	45	76	53	74¼	58⅜		10,000,000	50	$1Q*	June 15, 29	Buckeye Pipe Line	1,200	68	68	67	67 — ½
82½	65	126	76½	161	117	210	125		3,000,000	25	$1Q*	Sept. 30, 29	Chesebrough Mfg.	700	125	179	125	161 —21½
25⅞	17½	22⅝	16¼	23	16	29	16⅞		36,057,840	10	.....	Dec. 15, 27	Continental Oil	2,800	21⅝	22	17⅜	18 — 4
137	102	137	89	114	67	95	59¾		1,500,000	50	$1Q*	Sept. 16, 29	Cumberland Pipe Line ...	100	59¾	59¾	59¾	59¾ ...
63¾	43	68½	47	88	64½	70½	51		5,000,000	100	$1Q	Aug. 1, 29	Eureka Pipe Line	100	55	55	51	51 ...
32½	9⅞	13½	3½	13	4¼	6⅝	5		16,000,000	100	.....	June 30, 25	Galena Signal Oil	No sales.				
68½	52	68⅛	54	114¾	59¼	128	89⅝		73,117,577	25	30cQ*	July 1, 29	Humble Oil & Refining ...	21,800	116½	118⅞	107⅝	108⅛ — 9⅞
144½	125½	182	123¾	290½	176½	340½	285		20,000	100	10%S.A.	June 15, 29	Illinois Pipe Line	5,600	300¼	302	295	299¾ — 3½
..	..	64¾	37¾	104	56¾	41	26⅝	(sh)	6,458,267	N.P.	12½c	Sept. 2, 29	Imperial of Canada	19,600	35	36	29⅞	34½ — 1½
72½	58	94½	61	91⅞	74⅜	33¾	26¾		$5,000,000	$50	.....	Feb. 15, 29	Indiana Pipe Line (new).	1,500	34⅞	35¾	33½	33½ — ½
35½	28¾	39	28¼	55	35	30⅜	22½	(sh)	14,324,088	N.P.	12½c	Sept. 25, 29	International Pet. (new) .	43,200	28⅜	28⅜	22⅛	25½ — 3
20¾	12½	24	13½	32⅜	19⅜	25⅞	19		$6,363,350	12.50	25c*	Sept. 16, 29	National Transit Co.	1,200	20⅝	20⅝	19⅛	19⅛ — ½
51½	27¼	44½	31¼	75	38½	16	10		5,000,000	100	.....	July 15, 26	New York Transit	400	15¼	19	14⅞	19 + 3⅞
80½	64	100	70	69	56½	63	52¾		2,000,000	50	$28.A.	July 1, 29	Northern Pipe Line	No sales.				
67¾	55¾	67⅞	52	84	58½	19⅛	64⅛		60,000,000	25	50cQ*	Sept. 14, 29	Ohio Oil Co.	10,000	78	78½	73⅞	75½ — 2⅞
24¾	15	39	12	84	28	44½	23⅛		10,000,000	25	75c	Dec. 15, 28	Penn Mex. Fuel	700	25⅝	25⅝	25⅛	25⅛ ...
..	..	..	..	..	..	50	34⅝		.....	....	$1.25S	June 20, 29	Solar Refining (new)	300	37⅛	37⅛	34⅝	34⅝ ...
74½	61½	27¼	15½	19	15	22½	13		1,000,000	10	$10	Mar. 1, 29	Southern Pipe Line	200	22	22	20⅝	20⅝ — 1⅜
50	34½	41½	35	71⅞	36¾	60¼	40⅜		2,000,000	25	50cQ	Dec. 31, 28	South Penn Oil (new) ...	800	47	47	44	44¾ — 3¼
56	47½	83	55½	102	70	70	60		3,500,000	100	$1Q*	Oct. 1, 29	Southwest Pa. Pipe Lines.	50	63½	63½	60	63½ + 7½
70½	60½	81½	64⅝	95⅞	70⅞	63	51½	(sh)	18,000,000	25	62½c*	Sept. 16, 29	Standard Oil of Indiana ..	151,700	55¼	56	52	56 + ¼
36½	16½	20⅞	14⅝	37¾	15	32½	18		8,000,000	25	.....	June 16. 24	Standard Oil of Kansas ..	155,000	32⅛	32½	23⅝	30 — 3
134⅜	108	130	111½	179¾	122¼	46⅞	35⅛		17,012,559	10	40c*	June 26, 29	Standard Oil of Kentucky.	25,700	43	44½	36⅝	40¼ — 3⅜
51⅛	42	49½	40	54⅞	39⅞	50¼	45½		4,559,850	25	62½cQ*	Sept. 20, 29	Standard Oil of Nebraska.	300	48	48	45½	45½ — 2½
372	288	87½	72	134	71	129	95		14,000,000	25	62½cQ	Oct. 1, 29	Standard Oil of Ohio	750	110	110	95	98½—12½
21	15	21	14½	23½	16	18	10		861,000	25	.....	Nov. 1, 19	Swan Finch Co.	150	10	10	10	10 — 1
109⅜	90¼	....	....	111	72	133¾	105½		125,619,000	25	75cQ*	Sept. 20, 29	Vacuum Oil Co.	14,000	124	124	109⅛	114⅛ — 9½

*Also extras.

COMPULSORY MIXTURE OF FUEL

The Royal Hungarian Automobile Club has submitted to the government a petition requesting that the decree issued some time ago concerning the mixture of gasoline with dehydrated alcohol, shall be postponed for another year. The petition states that the motor vehicles cannot be adapted in such a short time for the use of the mixture and one year at least is necessary for all motor car owners to effect the necessary change.

MEXICAN PRODUCERS

Recent completions in Panuco oil field of Mexico included Standard Oil Co. of New Jersey's No. 46 Barberena, flowing an estimated 1,000 bbls. at 1,160 feet in San Felipe sandstone, and National Railways of Mexico's No. 313 in Jamesi River federal zone, Altamira district, completed at 1,738 feet and producing 900 bbls. initial. In southern fields, Mexican Eagle Oil Co. brought in its No. 18 Potrero del Llano at 1,935 feet, which produced 1,000 bbls. daily.

ROCKY MOUNTAIN AREA

(Continued from Page 121)

bbls. of black oil a day from the Embar in 27 wells, that being the lowest horizon previously drilled. The productive area of this structure embraces about 1,440 acres, all of which is held under a government lease by the Empire State with the exception of 160 acres leased by a subsidiary of the Empire Gas & Fuel Co., and 640 acres sub-leased to the Argo Oil Co. The Midwest Refining Co.'s No. 8 Wagonhound structure, SE Section 6-44-98, is drilling in a dry hole at 1,185 feet in brown shale.

In Carbon County, the Producers & Refiners Corp. has a small completion in No. 3, Section 28-21-86, Grenville Dome, in Carbon County, at a total depth of 870 feet. The same company's No. 2, SE NW, Section 34-26-88, Mahoney Dome, is drilling at 3,780 feet in the red beds. The Midwest Refining Co.'s No. 31, SW SE, Section 1-18-78, Dutton Creek, is drilling in a dry hole at 1,470 feet.

In Uinta County, the California Co.'s No. 1 Union Pacific, NE NW, Section 7-17-116, Muddy Creek, is bottomed at 4,365 feet and reaming has been completed to 4,365 feet.

On the Oregon Basin Dome in Park County, the Ohio Oil Co.'s No. 2 Sonners, Account 2, NE cor. Section 8-51-100 is drilling in the Embar at 3,628 feet and the well is flowing 150 bbls. a day at that depth. The 6⅝-inch was cemented at 3,593 feet. The Texas Production Co.'s No. 1 Sonners, NW cor. Section 29-51-100, is drilling at 810 feet, and the Orchard Oil Co.'s No. 7 Rue, SW NW, Section 28-51-100, is standing cemented on top of the Embar at 3,570 feet. The same company's No. 1 Atherly, SW cor. Section 33-52-100, is drilling at 1,907 feet and No. 1 Owens, SE cor. Section 29-52-100, is drilling at 1,700 feet after changing over to rotary.

The Cody Petroleum Co.'s No. 10 Klindt, NE SW, Section 6-51-100, is rigging up, and its No. 1 Garner, SW NE, Section 27-51-101, pulled in the derrick while pulling pipe. Last depth reported was 4,550 feet. The Oneida Oil Co.'s No. 1 Beck, SW cor. Section 28-52-100, is drilling at 1,875 feet. Outside of Oregon Basin, the Resolute Oil Co.'s No. 1 Badger Basin, SW NE, Section 17-57-101, is drilling at 3,950 feet.

Elk Basin

John B. Henderson, president of the Henderson Production Co. says the recently reported abandonment of that company's No. 1 and No. 2 wells in the Elk Basin Field was incorrect. The company, he states, started five wells on different permits and leases, two of these being completed as commercial wells, the other three not yet being finished, but no wells have been abandoned. Th California Exploration Co.'s No. 2 Pitchfork, NW NE, Section 14-48-102, was unable to recover bailer and is drilling it up at a total depth of 2,274 feet. The Midwest Refining Co.'s No. 1 Rosenberg, NE cor. Section 26-58-98, Frannie Dome, is waiting for cement to set with the 8¼-inch on bottom at 2,744 feet.

In Big Horn County, the Producers & Refiners' No 3, NW NW, Section 24-56-98, Garland Dome, is drilling up bailer dart at a depth of 4,220 feet, and the Ohio Oil Co.'s No. 1 Union Gas, NE NE, Section 22-56-97, Byron Dome, is drilling at 4,123 feet.

In Sweetwater County, the Mountain Fuel Supply Co.'s No. 1 Hay, NE cor. Section 26-17-104, South Baxter Basin, is underreaming the 8¼-inch at 3,503 feet, and its No. 1 Murphy, NE NE, Section 26-17-104, cemented the 8½-inch at 3,425 feet. Same company's No. 1 Cappers, SW NE, Section 2-19-104, North Baxter Basin, is drilling at 2,455 feet, and its No. 1 Tucker, NW SE, Section 18-13-99, Alkali Creek, is drilling at 3,057 feet.

IDAHO

The California Co.'s No. 1 Sorenson, NW SW, Section 33-3n-41, on the Meadow Creek Dome, Bonneville County, Idaho, which has had considerable trouble in shutting off water, is setting up a boiler to make another attempt, formerly power having been generated in a gasoline engine. Total depth is 3,550 feet. The hole is supposed to be bottomed on top of the Embar. Three hundred sacks of cement will be used. The Grand Teton Oil Co.'s No. 1 Blevins, SW Section 33-5n-44, Horseshoe Dome, Teton County, is drilling at 1,250 feet in hard sandy lime of the Apen formation after shutting off water with the 12½-inch. The Monida Oil Co.'s No. 1, NE Section 32-14-36, Beaver Dome, Clark County, is drilling at 175 feet. Norton Brothers are reported to have contracted with O. G. Boyington and E. G. Roberts to complete their No. 1, Section 19-10s-37, Arimo district, Bannock County, which is bottomed at 2,565 feet in water. Swabbing is in progress.

MONTANA

Near Bozeman, in Gallatin County, a strike of gas at a shallow depth has created some excitement. The well was being drilled for water, but opened a gas flow at 125 feet estimated around 10,000 feet. As this area is in the Powder River Basin where several natural gas seeps are known, the theory is advanced that there is a gas field in the lower sands. At Arvada, the railroad has placed a collecting device over a natural gas seep and is operating a gas driven pump that supplies the railroad with water.

Another gas well has been completed by the Aloe Big Five Oil & Gas Syndicate on the Schestak lease in the Aloe district. The flow is estimated at 5,000,000 feet. The well is on Section 23-33-3, and the sand was picked up at 990 feet. While the Aloe wells are in the Kevin-Sunburst district, they are considered wildcat ventures as this is the first drilling done in this territory. There is some talk of carrying the new well deeper and work has been suspended awaiting a decision.

At the Bears Den well on Section 7-25-1, Sweetgrass Hills, the crew succeeded in loosening a swedge lost in the hole some days ago and oil immediately rose 1,500 feet in the casing. This well was given a shot several weeks ago and estimates on production after the shot ran as high as 100 bbls. This is the first producer on the Bears Den structure, though a previous well found gas. The well, owned jointly by the Bears Den Oil Co. and the Sunburst Oil & Refining Co., will be put on production shortly. A topping plant has been installed in the field.

The Monalta Oil Co. well, just across the national boundary from the Vanalta producer in Canada, has passed 2,200 feet and has only about 200 feet to go to the Sunburst sand which is productive in the Vanalta well.

Kevin-Sunburst

Four oil producers were reported from the Kevin-Sunburst Field the past week, the best being the No. 1 Johnson-Jarrett on Section 20-35-2, which showed an initial production of 70 bbls. The Deloraine Oil Co.'s No. 9 Levnick, on Section 28-35-1, was shot in a stray sand at 1,500 feet and will make possibly 20 bbls. The A. H. Campbell interests found a small flow of gas in the Sunburst and a flow of oil in the Ellis, and will make a small commercial well. The Ferdig Oil Co.'s No. 23 Anderson, on Section 29-35-1, will also make a producer. B. A. S. Arronow is plugging back his No. 1 Goeddertz on Section 23-35-3, and will endeavor to develop a commercial gasser in the Sunburst.

The Lewis Carroll well on the Fifer lease in the Cat Creek Field has been put on the pump and is reported making about 40 bbls. of oil and showing a little water, which is not unusual at this location. Carroll has announced that a second well will be started on the same lease.

The Carter Oil Co.'s test on the Six Shooter structure in Stillwater County is drilling at about 4,000 feet with nothing of interest to date. It has been announced this well will be carried to 5,000 feet.

The State Land Board of Montana has announced that bids will be received until November 12 on the State's royalty oil from the Kevin-Sunburst and Pondera Fields. The new contract will go into effect December 1, 1929. The present contracts are held by the Shelby Pipe Line Co. and the Conrad Refining Co.

Pipe Line Runs

Daily average pipe line runs for week ending October 26:

WYOMING	
Salt Creek	31,330
Frannie	.....
Big Muddy	2,220
Oregon Basin	4,410
Byron	.....
Dutton	40
Elk Basin	550
Ferris	20
Grass Creek	2,130
Greybull	10
Hamilton	1,000
LaBarge	2,120
Lance Creek	170
Lost Soldier	3,930
Osage	540
Poison Spider	1,200
Rock River	2,260
Rex Lake	100
Lander	710
Simpson Ridge	50
Teapot Dome	30
Mule Creek	550
Pilot Butte	.....
Total	53,370
MONTANA	
Cat Creek	1,210
Kevin-Sunburst	6,880
Pondera	2,820
Lake Basin	40
Total	10,950
COLORADO	
Moffat	1,099
Fort Collins	1,874
Florence	708
Iles	1,133
Tow Creek	399
Boulder	25
Rangely	100
Total	5,338
NEW MEXICO	
Artesia	842
Cap Rock (Maljamar)	415
Hogback	420
Rattlesnake	1,679
Table Mesa	115
Total	3,471
Grand total	73,129

STABILIZATION OF PRESSURE DISTILLATE

(Continued from Page 39)

may need acid treatment. It is a fact, however, that the gum, color and odor forming constituents, concentrate themselves in the heavier fractions, so much so that a top cut can usually be removed that only needs a doctor wash. This can easily be determined in the laboratory.

If 30 per cent of the pressure distillate can be removed in the column, a considerable part of the pressure distillate must be driven from the base of the column. The top temperature can be controlled by thermostatically returning part of overhead condensate or by a partial condenser cooled by charging stock or water.

Can Be Modified

The foregoing arrangement of stabilizer and fractionating column, and accessories can be modified if desired, so as to utilize heat of the hot pressure distillate for column heating after the pressure distillate leaves the dephlegmator of the cracking unit, and before it is cooled. This waste heat can be utilized for bottom heat of the columns, instead of the waste heat from the exhaust steam of the hot oil pumps.

There remains to be considered a degasifying-fractionating-pressure-storage unit for a refinery that does not have a vapor recovery unit, or may not care to install one. In this case, the stabilization must be conducted at as high a pressure, and low a temperature as possible, at the same time preferably contacting the overhead gas with heavy pressure distillate so that the gas leaving the unit will be stripped as cleanly as possible of gasoline. Under these conditions, one can resort to high pressure stabilization and absorption, as shown in Figure 2.

Stabilization is conducted under the full pressure of the cracking unit, say 175 pounds. The first column becomes a fractionating and absorbing one, in that the partially condensed pressure distillate is put into the column at or near the bottom of same, while a heavy fraction of pressure distillate is taken out of the tower base, cooled, and recirculated to the top of the column, to act as a scrubbing agent, to rid the gas of virtually all the gasoline it carries, so that only dry gas leaves the top of the stabilizer, to be used as fuel.

The stabilized pressure distillate is then sent at lower pressure to a fractionating column, and a light overhead cut removed from it, which does not need acid treating, just as in the other arrangements already discussed.

Minor Variations

Obviously, many minor variations may be introduced into the degasifying and fractionating equipment. Each refinery has its own particular problems and conditions which should be studied thoroughly before equipment is designed for that particular plant.

Wilde, Brian and Coleman[1] of the Humble Oil & Refining Co. decrease evaporation losses of pressure distillate by passing same from the cracking unit into a fractionating column at 120 pounds pressure, and an operating temperature of 375 degrees Fahrenheit, at the bottom of the column, and 150 degrees Fahrenheit at the top. An amount of light gasoline plus gas equal to about 4 per cent of the pressure distillate, is taken overhead, the gasoline being stored at 100 pounds pressure. Stabilized pressure distillate is removed from the bottom of the column. This method serves adequately for stabilizing the pressure distillate, but the light pressure distillate cut is charged with gas at 100 pounds and is exceedingly wild, so that such handling of it as is necessary entails loss. Further, expensive 100-pound tanks are needed. The present authors prefer to remove more of the gas from this light fraction.

Wilde, Brian and Coleman also stabilize crude oil charging stock before it enters the toppers or other crude stills. This is done by fractionating the crude oil in a tower, under a pressure of 50 pounds, with a bottom temperature of 280 degrees Fahrenheit, and a top temperature of 172 degrees Fahrenheit. In some cases a light cut amounting to 4 per cent of the charging stock is removed overhead and stored under a pressure of 28 pounds until it is mixed with other gasoline and shipped. Gas is vented from the accumulator tank of the fractionating unit to a vapor recovery plant.

At one refinery in the Mid-Continent Field degasification (stabilization) of the pressure distillate or pressure storage of a portion of same is not attempted but a 30 per cent cut of the pressure distillate is removed and not acid treated. This is done by means of a secondary tower attached to the cracking unit in that the pressure distillate is condensed as a whole in the receiver of the unit in the customary way, and then heat exchanged with hot pressure distillate from the dephlegmator of the cracking unit, and introduced into a column. A steam bundle in the base of the column furnishes the necessary heat, so that a top cut is driven overhead and condensed and not acid treated. Bottoms are thus stabilized and acid treated, but there is a heavy loss of the light cut.

At another refinery the pressure distillate is stabilized under a pressure of 300 pounds per square inch. This means that the pressure distillate must be pumped from the cracking system pressure of about 150 to 175 pounds, to the column pressure of 300 pounds. Overhead gas does not go to recovery plant but is used direct as fuel. The objection to this system is that in order to accomplish the desired separation it is not necessary to go to this high pressure with the resulting high pumping and heating cost.

[1]The Oil and Gas Journal, October 3, 1929, p. 222.

KANSAS CITY OIL SURVEY

KANSAS CITY, Mo., Oct. 26.—A geologist's investigation is to be made at the various points in Jackson County where land owners are convinced oil lies beneath their farms.

Lou E. Holland of the chamber of commerce said he was expecting a visit from Alfred Peterson, geologist, and oil drillers who have put down some 150 shallow wells in the Lees Summit district. The results of the Peterson investigation will be reported to the industrial committee of nine.

ACCOUNTING IMPORTANT IN REFINERY OPERATION

(Continued from Page 46)

have to be consolidated into one department depending upon the operating conditions of the refinery. If it is desired to obtain costs for skimming operations separate from cracking operations, the expense of operating departments handling products for both can be divided on the basis of the products handled for each division.

Utility Departments

Utility departments are the departments of the refinery as a whole that serve the operating and general departments and the expense charged to each of the utility departments is distributed on the basis of the service rendered each of the other departments. The suggested utility departments, per classification of accounts, can be revised to conform to the operating conditions of the refinery.

General Departments

Under the heading of general departments has been included departments that are not classified as direct operating departments or utility departments. The general departments, per classification of accounts, can be adapted to the working conditions of the refinery for which the classification of accounts is used.

Total monthly charges to material warehouse department is to be distributed on a percentage or some other basis to materials requisitioned from the warehouse during the month. Machine shop and mechanical department expense is to be distributed on a percentage or some other basis to job order labor of machine shop and mechanical men. This department is not to be charged with material or labor that can be distributed directly to job orders.

Material reclamation department expense is an offset to the credit for reclaimed material which is taken into the regular refinery warehouse stock. Material, mechanical and reclamation department expense being handled as suggested above will be distributed monthly and the total department expense cleared monthly or at least at the end of each year.

Department Subdivisions and Accounts

For the purpose of obtaining detail cost classification, the departments are subdivided under the following heads: Labor, supervision, repairs and maintenance, material supplies, utility distribution, sundry charges. Under each of these subdivisions account classifications are provided to furnish detail cost information as follows:

Labor

Under the classification of labor the chart of accounts shows four subdivisions.

Operating labor is to be charged with the wages of the regular operating or shift men of each department. Charges to this account will not vary from month to month unless rates or number of operating men change.

Cleaning expense is to be charged with labor and material so that the total cost of cleaning can be shown in one amount. This account is to be used in departments where cleaning expense is of sufficient importance to warrant separate classification, such as cracking plant stilling.

Unclassified labor is to be charged with such wages as can not be classified as operating or cleaning labor. This account will seldom be used by operating departments.

Clerical expense is to provide for the salaries of office and clerical men. Operating departments will have use for this account only when a clerk is used within the department to relieve operating men of clerical work.

Any additional accounts can be added under the labor subdivision depending upon the requirements of the management and operating conditions of the departments.

Supervision

Under the heading of supervision two accounts are provided:

Direct supervision is for the salary and expense of foremen or assistant superintendents who have direct supervision of one or more departments.

Indirect supervision is to be charged with a portion of the salary and expense of superintendents and assistants who have indirect supervision over all departments of the refinery. This expense is prorated on the basis of direct labor charge or some other method which will give a fair distribution of the total salary and expense of superintendents and assistants.

Repairs and Maintenance

Under the heading of repairs and maintenance three classifications are provided.

Ordinary repairs and maintenance account is to be charged with labor and material for the ordinary repairs and maintenance of equipment in use. Charges to this account under ordinary conditions should vary little from month to month. Variations of any consequence can be explained by detail statements.

Unusual repairs and replacements. This account is to be charged with repair and replacement items of an unusual nature that can be classified as ordinary repairs and maintenance charges and are not handled as offsets to reserve for depreciation. This classification is used for the purpose of distinguishing between the unusual repair and replacement items and charges for ordinary repairs and maintenance.

Changing equipment and dismantling. This account is to be charged with labor for changing equipment within a department that can not be classified as a repair item or changing equipment from one department to another, such as moving a tank, pump, etc. This account is also to be charged with expense of dismantling worn out equipment and for retiring investment equipment that has not been worn out but is of no further use for the department from which it is taken. If a monthly provision is made, as suggested under heading of "depreciation and obsolescence," dismantling expense can be spread evenly throughout the year.

The number of accounts that can be used under repairs and maintenance heading will depend upon the requirements of the management. Accounts can be provided to separate labor from material and in sufficient detail to show repairs to each class of equipment used in each department, if this information is desired. Regardless of the number of accounts used under this heading, it is important that a definite undertanding is had as to what constitutes repairs and maintenance charges. If the accounts, as shown in classification of accounts, are used, detail repair and maintenance costs for any equipment in a department could be ascertained from a separate analysis of charges.

Material Supplies

In the account classification, accounts are suggested under this heading which will vary according to the operations of the departments and the requirements of the management. Accounts can be provided to furnish as much detail as is required. This heading does not provide for raw material charges, such as crude oil, casinghead gasoline for blending purposes, packages, etc., but it does provide for oils used as supplies, such as lubricating oils, absorption oils, etc., and all other materials used as supplies that are not a part of the finished product.

Utility Distribution

Under this heading accounts corresponding with the utility departments are provided. These accounts are to be charged with the department's portion of the distributed expense of utility departments. This distribution is made on meter readings, time basis, or some other method to reflect as near as possible the actual services rendered to each department.

Sundry Charges

Under the heading of sundry charges accounts that can not be properly classified under the heading of any of the other subdivisions are provided for. The accounts, shown under this division in the classification of accounts, can be revised to provide as much detail information as required.

"Depreciation of equipment in use" is to be charged with normal depreciation of investment equipment actually in use in each department of the refinery.

"Depreciation of obsolete equipment" is to be charged with amounts written off to relieve "investment" of equipment which has been discarded before being fully depreciated because of being replaced by more efficient equipment. This account is considered as a "plant general" item only and is not necessary if a "reserve for obsolescence" has been provided for.

Depreciation and Obsolescence

Refinery costs should include not only labor and material charges but a cost for the use of permanent equipment representing the refinery investment. This cost, charged as depreciation, should take into consideration the estimated life of the equipment used, together with the salvaged value at the time it is abandoned. The use of any piece of equipment costs just as much as the original installation plus the expense of dismantling when it is removed less the salvaged value. Rates of depreciation should be determined from past experience and revised from time to time as required. In addition to the charge to expense for depreciation provision can be made for the expense of dismantling investment equipment when it is of no further use, also for obsolescence if the equipment is dismantled before being completely worn out and depreciated. By providing a reserve for obsolescence and expense of dismantling investment equipment costs can be more evenly spread over the life of the equipment and eliminate the necessity of adding large amounts to the costs in any one period.

Investment Record

It is essential that a complete investment record be kept for refineries which should classify investment equipment by departments to correspond with classification of accounts for cost accounting purposes. The investment record should show in detail the cost of each piece of equipment together with the amount written off as depreciation. Cost and net value of equipment for each department as shown by the investment record will serve as a basis for distributing depreciation, insurance, taxes, etc. Investment records should be kept up to date at all times and all equipment dismantled written off so that the amount charged to depreciation will represent depreciation on equipment actually in use for each department. The use of investment material transfers covering the movement of any equipment which has originally been charged into investment has been found to work satisfactorily when used in connection with a job order system. The method used to keep the investment records up to date will have to be adapted to the operating conditions of the refinery.

Method of determining cost of producing gasoline from skimming and cracking plant operations per skeleton form of statement as shown above is based on the theory that the refinery as a whole is operated for the main purpose of producing gasoline from crude oil. All other products produced from crude oil by skimming and cracking plants are treated as by-products and deducted from the total crude oil and manufacturing cost at the net value received from their sale.

Skimming and cracking plant operations are taken as a whole to avoid complications that might arise due to distribution of certain departmental expense. All refinery expense is included in determining the cost of gasoline produced, excepting loading and shipping department expense and depreciation of obsolete equipment. Loading and shipping expense is considered as a handling cost of the finished product and is included in the summary to arrive at the cost of gasoline leaving refinery. Depreciation of obsolete equipment is excluded so that the cost of producing gasoline will be the operating cost and maintenance of equipment actually in use. If it is desired to ascertain the cost of gasoline produced, including depreciation of all equipment, whether in use or not, the amount deducted from manufacturing costs for depreciation of obsolete equipment, per skeleton statement, can be added to "per barrel" and "per gallon" costs.

The ultimate field method, providing for the elimination of average treating losses from unfinished products, is used in determining the number of gallons of byproducts produced. Net realization from byproducts is determined by deducting from the billing price the per gallon, shipping, selling and administration costs of total gallons produced. This net realization being deducted from the total crude and manufacturing costs leaves the net cost of gasoline produced from crude oil. To this is added cost of natural gasoline used in blending for total cost of finished gasoline produced.

GASOLINE TAX TO BUILD PLANES

A motion was introduced in the national assembly for the imposition of a tax of 1½ cents gold per kilo upon gasoline imported into El Salvador, the proceeds of the tax to be destined exclusively for the buying of modern airplanes. It is suggested that this tax be in addition to the present tariff duty of $2.25 per 100 kilos gross weight on gasoline.

COST OF PRODUCING GASOLINE FROM SKIMMING AND CRACKING OPERATIONS
MONTH OF.....

Bbls.		Unit value	Amount	
	Raw product cost:			
.....	Crude Oil - - - - - -	.....	.....	
	Pipage on crude oil - - -	.....	.....	.....
	Manufacturing costs:			
	Skimming plant costs - - -		.....	
	Cracking plant costs - - -		.....	
	Office and general dept. costs -	.....		
	Less depreciation obsolete equipmt.	.....	.....	.....
	Total crude oil and mfg. cost -			.....
Gals.	Deduct: Realizable value of by-products:			
.....	Kerosene (billing price) - -	.....	.....	
.....	Gas oil (billing price) - -	.....	.....	
.....	Fuel oil (billing price) - -	.....	.....	
.....	Fuel gases - - - - -	.....	.....	.....
.....	Less: Pro rata marketing expenses:			
	Shipping - - - - -	.....	.....	
	Selling - - - - -	.....	.....	
	Administration - - - -	.....	.....	.....
	Net realization from by-products			.....
	Net cost of gasoline from crude oil			.....
	Add:			
	Natural gasoline used in blending - - - - - -		.....	
	Freight on natural gasoline - - - - - -		.....	.....
	Cost of gasoline produced - - - - - -			.....

SUMMARY

Gals.		Per bbl.	Per gal.
.....	Net cost of gasoline from crude oil - - - - -	.....	.....
.....	Cost of natural gasoline for blending - - - - -	.....	.....
.....	Gasoline production costs - - - - - - -	.....	.....
	Add:		
	Pro rata shipping expense - - - - - -	.....	.....
	Cost of gasoline leaving refinery - - - - -	.....	.....
.....	Depreciation on obsolete equipment - - - - - -	.....	.....

FLEXIBILITY SHOWN IN VAPOR PHASE CRACKING

(Continued from Page 46)

verter tube in the case of Cabin Creek gas oil.

From the data given in this table it appears that the process is applicable to a wide variety of charging stocks. Inspection of the distillates produced from these various charging stocks shows a remarkable similarity, if they are all rerun to the same boiling point specification. Analyses made of the gases produced also indicate that the character of the charging stock has little to do with their composition. It stands to reason from a study of the cracking reaction that a light charging stock should yield a higher percentage of distillate than a heavy one, since decomposition of the molecules needs to be less profound. In many cases, however, the yield of distillate will be determined by the quality of fuel oil which must be produced.

Operation Flexible

At this point the true flexibility of the process becomes evident. Even a casual inspection reveals that we have here four separate operations involved, each one an individual problem, but all co-ordinated into one process. The economizer and evaporator constitute an ordinary tube still unit for the production of vapors and a fuel oil residue. To increase fuel viscosity it is necessary to increase the quantity of steam, or in some other way to increase the percentage vaporized without cracking the residue. To decrease fuel viscosity one may increase fuel production, or the oil line temperature may be raised enough to cause mild cracking. If carefully done, this latter method will result in decreasing fuel percentage as well as viscosity. By the same token it is possible to operate so as to make an asphalt residue as a final product instead of a fuel oil.

The second operation involved is the cracking of the vapors in the converter. As can readily be seen this operation may be varied at will so as to secure the desired products and yields. This constitutes the only special piece of equipment in the Gyro process, and represents less than 30 per cent of the total cost of the installation. The converter has a specially designed furnace intended to utilize in the most efficient manner the radiant heat generated by combustion of the fuel. Care is taken that the rate of heat absorption by the vapors through the converter is proportioned to the needs of the reaction. Thus in the first few feet heat is absorbed at a rate in excess of 75,000 B.t.u.'s per square foot per hour, but farther on this rate is dropped to that necessary to maintain the temperature of reaction. In the beginning of the development work when recirculation of flue gas was employed difficulty was encountered in utilizing all of the waste heat in the flue gases leaving the converter. With the improvements in furnace design mentioned above the same heating is now done with 5 feet of tubing which formerly required 10 feet and the waste gases are insufficient in quantity to vaporize the gas oil required by the process.

Fractionating Apparatus

The third unit in the process is the fractionating apparatus. For this purpose ordinary refinery equipment may be used. The heat abstracted in producing reflux has been utilized by converting the refluxer into a low pressure steam boiler. In this way sufficient heat is obtained, when added to that recovered in cooling recycle stock, to produce all of the steam used in all pumping operations and to evaporate the distillate in the re-running operation. It is therefore apparent that fuel consumption figures quoted for this process include cost of steam and re-running and due consideration should be given this fact in comparing with other processes.

The fourth part of the system is the gas recovery plant. For this work either compression or absorption may be used, but great care should be taken to return all of the product so recovered to the raw distillate produced. Due to the fact that it is almost 100 per cent unsaturated it possesses very high antiknock value, and it also requires treatment similar to that given the remainder of the distillate in order to produce a suitable motor fuel. Since the fixed gas comes off the look box at almost atmospheric pressure it is saturated with motor fuel fractions and may run as high as 5 gallons per thousand cubic feet. Approximately 20 per cent of the distillate made therefore is recovered from the gas.

Sulphur Compounds

A feature of low pressure vapor phase cracking which appeals to the refiner who runs a high sulphur crude is the desulphurizing character of the reaction and the freedom from worry over corrosion problems. When cracking a high sulphur charging stock the distillate obtained will have a sulphur content of about 50 to 60 per cent that obtained by producing the same boiling point distillate by liquid phase cracking. This appears to be due to the fact that a much higher percentage of hydrogen sulphide is split off which appears in the fixed gas. It would seem probable at first that this fact would lead to increased corrosion problems, but examination of the temperature gradient through the process reveals some interesting facts.

It will be noted that in the economizer and evaporator the temperature is low enough to avoid material cracking and the consequent production of large amounts of H_2S. Corrosion in this part of the apparatus will not be great, therefore, especially since all of the light fractions have been removed and the entire body of oil passing through the economizer has been held for some time at temperatures between 475 and 550 degrees Fahrenheit. In the converter the temperatures are right and sufficient H_2S is present to cause corrosion at a very rapid rate. The use of calorized steel or stainless steel parts, made necessary by the very high temperatures and oxidizing conditions in the furnace gases, effectively prevents excessive corrosion in this part of the equipment. Since the temperature is reduced to 600 degrees Fahrenheit or less in the arrester and is maintained below that figure for the remainder of the apparatus, little corrosion is encountered in vapor lines and towers. As is well known, it requires temperatures in excess of 600 degrees Fahrenheit or high velocities at lower temperatures to cause continued corrosion by hydrogen sulphide.

In the first place it was the quality of the product alone that caused the refiner to turn to vapor phase cracking methods. It is, therefore, with considerable gratification that he can now reflect that he has a process which not only produces that same quality of product, but in addition produces it in quantities and at costs which compare favorably with the production costs of liquid phase cracked gasoline.

LOCATION OF REHEATER IMPORTANT IN OPERATION

(Continued from Page 129)

renheit to 1 degree Fahrenheit and consequently there was no appreciable liberation of vapor in this section of the still.

The temperature gradient "B" was obtained when both the preheater and reheater, as shown on Figure 1, were used. The oil to the still was 333 degrees Fahrenheit. The drop on Tray 1 was only 5 degrees Fahrenheit. This does not mean less total flash, but merely less vapor release due to initial contact with steam in the still. The higher temperature level of 333 degrees Fahrenheit obtained by the use of the preheater naturally flashed more gasoline vapors than did the temperature of 266 degrees Fahrenheit obtained in the heat interchangers alone.

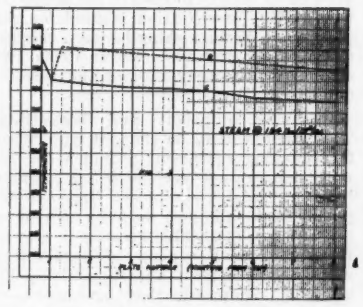
The curve shows a drop of 4½ degrees Fahrenheit to Tray 5, which is approximately the same gradient as that portion of Curve "A".

The reheater gave an increase of 18 degrees Fahrenheit, but the quantity of vapors formed was too small to register an increase in temperature on Plate 5. For this reason I have called the reheater by its true name, rather than the commonly used term "reboiler." Its function in the gasoline plant still is to reheat the oil rather than reboil any appreciable portion of it. Except in Case A where we have an extremely low influent oil temperature we do not have an appreciable reboiling effect.

As indicated on Figure 2, the steam pressure in the preheater and reheater were the same. The oil from the reheater was 10 degrees Fahrenheit above that from the preheater; which merely indicates less B.t.u. load on the reheater.

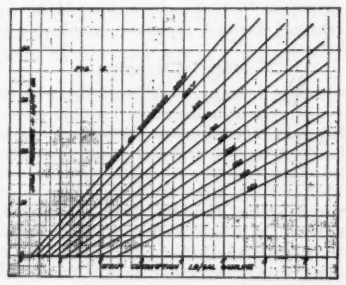
Use of Preheater

Figure 3, Curve C, shows a temperature gradient using the preheater alone. Practically the same steam pressure prevailed as in Case B. The initial drop in temperature, tray 1 in Case C, was practically twice that in Case B. This, we believe, was due to the fat oil saturation which in C was twice B. Although the fat oil saturations vary widely, we find the temperature gradiants below Plate 1 are practically parallel.



Curve "D" indicates what will take place when using the same equipment and steam pressure that were used in obtaining the data expressd by Curve "B". The marked difference is that the reheater would be between Trays 1 and 2.

All other conditions being equal, the steam necessary for stripping is practically inversely proportional to the temperature of the oil; that is, the higher the oil temperature the less steam required. Figure 4 shows the relation between oil temperatures and steam requirements and varying still pressures. This chart may be used for approximating the amount of steam required for stripping under average conditions. To determine accurately the quantity of steam we must make corrections to Chart 4, taking into consideration:



A. Fat oil saturation.
B. Lean oil saturation.
C. Quality and temperature of steam.
D. Composition of the gasoline.
E. Composition of the absorption oil.
F. Number of trays in the still.

Let us now analyze the temperature gradients to determine the probable steam saving by shifting the location of the reheater.

The following average temperatures are shown on the gradients:

Curve A—281 degrees Fahrenheit.
Curve B—331 degrees Fahrenheit.
Curve C—320 degrees Fahrenheit.
Curve D—335 degrees Fahrenheit.
D corrected to compare with B—338 degrees Fahrenheit.

This correction is made because Curve "D" was built up from C, and Curve "C" is some 3 degrees Fahrenheit below B on Tray 1. There is still another correction which might be made, that is, when the reheater is installed gradient "D" would flatten out below Plate 2, because the oil saturation would be less on the lower trays and consequently less latent heat formed in successive flashes. However, we will not use this correction.

With a still pressure of 20 pounds per incr, 2-ga. we find from Chart 4, the following steam requirements:

A—5.75 pounds per gallon.
B—3.14 pounds per gallon.
C—3.6 pounds per gallon.
D—2.95 pounds per gallon.
D corrected 2.85 pounds per gallon.

It is obvious that condition A with no preheater is the least economical of the lot.

Condition C with no reheater is far ahead of A. The steam consumption is only 63 per cent of that required in A.

Curve B with the preheater in use and the reheater under Plate 5, shows that we need only 87 per cent as much steam as was required by C.

Condition D corrected, with the preheater in use and the reheater installed below Plate 1 we may expect a steam saving of 9 per cent over Condition B. This should give us a true comparison of the two locations of the reheater.

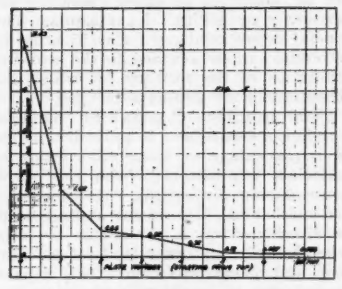


Figure 5 throws additional light on the subject of initial flashing and the stripping gradient on the trays. This curve was made from tests on another still with no reboiler in use. It shows more than anything else that most of the gasoline is liberated on Plate 1, and that the decrease is almost nil below Plate 5. In other words, the greater heat load is on Plate 1 with increasingly smaller amounts on the lower plates.

We believe the logical place to install the rereater is between Plates 1 and 2: for at this point after two successive flashes, the greater portion of gasoline has driven off and there will be only small drops in temperature below Plate 2. The oil saturation will be low beyond Plate 2 with a correspondingly small temperature loss from this point to the bottom of the column. The temperature gradient will remain almost flat and the temperature level throughout the stripping section will remain high, thus demanding a minimum quantity of stripping steam.

REFINERY OPERATORS DISCUSS PROBLEMS

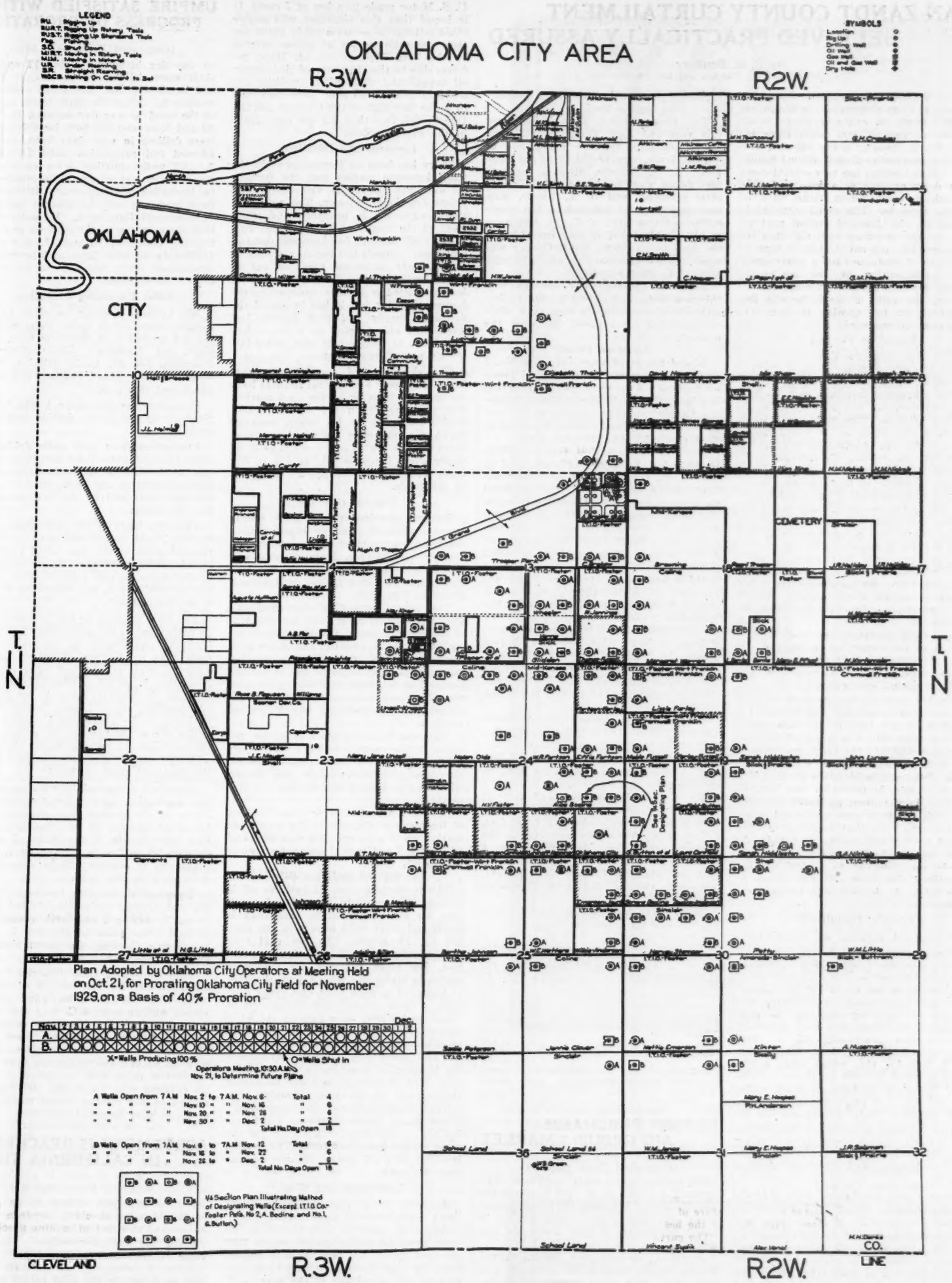
(Continued from Page 38)

the appointment of a committee of three members with himself as chairman and with J. A. Sartori and J. M. Wadsworth as members. This committee outlined the problem and gave it to C. E. Votrain of the Barnsdall Refineries, Inc., as chairman of a committee to work out in detail. Mr. Votrain presented a simple, complete method of refinery accounting which was presented for discussion.

The discussion which followed led to the general belief that a reserve should be set aside to take care of obsolescence in the same manner as insurance premiums are paid to cover fire losses. The amount of the obsolescence factor will depend upon past experience and good judgment and should be set in advance of the time the equipment starts operating. This monthly expense item, which goes into the surplus, should be made a regular part of the cost of making gasoline.

RESIGNS FROM S. O. OF NEW YORK

Theodore Pratt has resigned as a director of Standard Oil Co. of New York. Mr. Pratt is a director of Chase National Bank, Delaware & Hudson Co. and Germanic Safe Deposit Co. of New York.


OKLAHOMA CITY AREA
R.3W.
R2W.
OKLAHOMA
CITY
CEMETERY
T.11N.
T.11N.
CLEVELAND
R.3W.
R2W.
CO. LINE
Plan Adopted by Oklahoma City Operators at Meeting Held on Oct. 21, for Prorating Oklahoma City Field for November 1929, on a Basis of 40% Proration
X=Wells Producing 100%
O=Wells Shut In
Operators Meeting, 10:30 A.M., Nov. 21, to Determine Future Plans
A Wells Open from 7 A.M. Nov. 2 to 7 A.M. Nov. 6 - Total 4
" " " " Nov. 10 " " Nov. 16 " 6
" " " " Nov. 20 " " Nov. 26 " 6
" " " " Nov. 30 " Dec. 2 " 2
Total No. Days Open 18
B Wells Open from 7 A.M. Nov. 6 to 7 A.M. Nov. 12 Total 6
" " " " Nov. 16 to " Nov. 22 " 6
" " " " Nov. 26 to " Dec. 2 " 6
Total No. Days Open 18
1/4 Section Plan Illustrating Method of Designating Wells (Except LT.I.G. Co. Foster Pets. No 2, A. Bodine and No. 1, G. Burton.)
See Below for Designating Plan

Map shows how Oklahoma City Field will be prorated in November and December. On certain days when the Class A wells are producing the Class B wells are shut in and vice versa. On certain days all wells will produce. The plan is to cut the potential production 40 per cent in November and 50 per cent in December.

VAN ZANDT COUNTY CURTAILMENT BELIEVED PRACTICALLY ASSURED

By L. E. Bredberg
Fort Worth Bureau, The Oil and Gas Journal

FORT WORTH, Tex., Oct. 28.—After opening a distinct new field, in absolutely wildcat territory, and attracting the attention of the oil fraternity, Pure Oil Co.'s No. 1 Jarmon, in the SE cor., Section 2, Nacogdoches County School Lands, Van Zandt County, has now settled down to a daily average of around 257 bbls. through a one-half-inch choke with 50 pounds pressure. The well is pinched in due to no pipe line connections at present to take the production, although the company has erected ample storage to take care of production for a brief period, and is dismantling steel storage in the Powell Pool to move to the tank farm west of the well. There is nothing definite known as to just what arrangements are to be made about laying a line to the well, or who will do it. It has been conjectured that a line may be laid from the Pure Oil Co.'s Smith Bluff refinery, a distance of about 200 miles, and another thought is that the Pure Oil Pipe Line Co., a subsidiary of the Prairie, may lay a line from the Boggy Creek Field. Still another report states that a loading rack may be built near the town of Grand Saline on the Texas & Pacific Railroad, about 11 miles north of the discovery, and a line laid from the well to this loading rack, and the oil shipped out to the coast by way of tank cars. Something definite should be known about pipe line plans in a short while, and Chicago offices of the company will give out such facts when plans have been settled.

It has been about three weeks since the discovery was made, and no location has been made near the discovery for another test. The nearest wildcat is about 4 miles northeast in the John McFadden Survey over in Smith County, and the well is to be drilled by Kimbrough and others in the northeast corner of the G. E. Kadone 259-acre tract.

Another tentative location was reported to have been made by the Roberts Oil Corp. last week, but since that time the 2.1-acre tract which was owned by Roy Reynolds, Roberts Oil Corp. and others, has been purchased by the Pure Oil Co. for a reported consideration of $100,000, which practically precludes any immediate test in the area, and will save the Pure Oil Co. from making several offset locations to tests that might have been drilled on this small plot of ground. As the companies in the area are co-operating in an endeavor to curtail drilling operations the Pure Oil Co. seems to have taken the longest step towards co-operation.

Discuss Curtailment

The second meeting of officials and representatives of the major companies owning acreage in the area was held in Houston this week, but so far no word has been given out as to just what plans were made to curtail operations, and whether all the companies were in favor of such curtailment, but it is generally believed that practically all of them favored such plans, at least the Humble Oil & Refining Co., which owns a 13,000-acre block to the northeast of the Pure Oil Co.'s 17,000-acre block. The Sun Oil Co. and Shell Petroleum Corp. have signified their willingness to co-operate in order to curtail developments. The latter company owns the east offset 25 acres to the well, but has not made an offset location, and it is doubtful when it will.

Surface and geophysical date indicate a major high on which the Pure Oil Co. blocked the majority of its acreage, and core drill tests proved a structure covering an area about 10 miles long and about 6 miles wide, with a closure of nearly 450 feet in that area. Believing at first that the topographic high reflected a salt dome a geophysical party made many shots of the area but no salt dome indications were found. These shots, however, did reveal the large subsurface high, and it was then that the company started leasing the block.

The Pure Oil Co. first looked over this area and East Texas in 1927, primarily searching for salt domes, and R. W. McIlvain, vice president of the company, B. S. SoRelle, division manager for Texas and Louisiana, T. Wasson, chief geologist, and R. A. Liddle, division geologist, all believed in the possibilities of this part of Texas, and as a result of this belief it may be said that the discovery in Van Zandt County was made. The structure was originally mapped by Julius Fohs.

Enormous possibilities now underlie this new area, and it will be due to far-sightedness if drilling is kept at a minimum, if not at a stand still, for the present.

Anderson County

Abandonment of Pure Oil Co.'s No. 1 Jackson, a deep test on the Bethel Dome of Anderson County, a gas well on the southeast side of the Boggy Creek, Anderson County, and two failures on the latter dome, were completions reported in East Central Texas the past week.

The Bethel test was quit after drilling to 5,836 feet, being dry in white sand at that depth. Humble Oil & Refining Co.'s No. 2 Beard, Boggy Creek, was completed as a small gas well at 3,627 feet while the same company's No. 4 Lizzie Smith and No. 2 Purvy were quit. The latter was dry at 3,503 feet. The Smith well failed to flow after swabbing at 3,682 feet.

Other operations at Boggy Creek are Humble Oil & Refining Co.'s No. 3-A Jones, drilling sand and boulders, 1,100 feet; No. 2 Gauger, drilling sandy shale at 1,270 feet; No. 3-B Elliott & Clark, drilling chalk at 2,521 feet; No. 3 Tom Jones, Jr., rigging up; No. 1-B Todd, derrick; and Magnolia Petroleum Co.'s No. 1 Williams, north side of the dome, drilling in sidetracked hole at 3,889 feet in chalk.

On the Posey Saline, also Anderson County, Humble Oil & Refining Co.'s No. 1 Birdwell is rigging up. In Rusk County, Magnolia Petroleum Co.'s No. 1 Duran, Lollar Survey, near Pine Hill, is drilling lime at 3,565 feet.

C. F. Lytle's Trinity sand test at Mexia, Limestone County, No. 2 Thompson, is drilling sandy shale at 4,206 feet.

The only other active operation in the division are Killiam & Phillips' No. 4 Jones, Falls County, drilling lime at 1,532 feet; Haley & Young's No. 1 Knight, Freestone County, fishing drill pipe at 4,806 feet.

Daily average production the week ending October 26, was:

Boggy Creek	3,345
Cedar Creek	85
Currie	425
Hill County	61
Mexia	5,051
Minerva	600
Nigger Creek	240
Powell	6,963
Richland	350
Thrall	33
Van	503
Wortham	1,025
Total	18,681
Week ending October 19	19,588
Decrease	907

EXPORT PURCHASES AID GROUP 3 MARKET

(Continued From page 36)

these refiners since early in August had brought a minimum of spot business for several weeks. The bulk of the sales were going to refiners who were willing to quote one-half to 1 cent under the top price.

Some of the low price factors shared in the export business of last week and will shift their plant operations to increase their output of high gravity gasolines with a corresponding decrease in the U. S. Motor output. This has enabled them to advance their price on the U. S. Motor grade to a low of 7 cents. It is hoped that this situation will enable other refiners to secure a ready outlet for their domestic grades at prices covered by the 7 to 7½-cent spread. Many refiners due to the character of their crude oil supply and their plant facilities are not in a position to shift their operation to make the high gravity export grades. Due to this fact they did not participate in the export orders.

Kerosene and Distillate

There has been no improvement in the weak kerosene market and the furnace oil distillate market is also easier and prices fractionally lower. The easy distillate situation is probably a development of the weak kerosene market. This is the "off season" for kerosene demand and many refiners are running a part or all of their untreated kerosene cut to their distillate tanks. This policy no doubt has prevented a further collapse in the kerosene market but it has increased the distillate supply and spot buyers last week were able to pick up a few orders one-eighth to one-quarter cent under last week's prevailing market.

The shipments of distillates on contracts are heavy and several refiners have no material to offer on the spot market. The price range on the several grades varied from 3⅞ to 4¼ cents. Material which does not meet the usual specifications sold as low as 3¾ cents. The 41-43 water white kerosene sold at 4¾ to 5¼ cents with 5 cents the general quotation to the trade.

Natural Gasoline

Natural gasoline prices were steady over the week. Most of the manufacturers the latter part of last week were sold up for October delivery. More gasoline will be available with the start of the new month and the spot market will become active at that time.

The heavy buying of the past two weeks coming from refiners in all parts of the country except the West Coast absorbed the October output and in the Mid-Continent Field reduced storage. The same situation is reported in the eastern fields. This situation is the basis for considerable optimism on the part of the manufacturers regarding the November market.

The uncertain feature lies in the position of the eastern refiners whose purchases this month were responsible for the strong market. It is not known whether this buying will continue in November.

Grades AA and A were firm the first of the week at 6¾ cents. The prevailing market on the B and BB was 6⅝ and 6¾ cents. The Grade C was not active at 6½ to 6¾ cents.

Fuel Oil and Gas Oil

The market for fuel oil and gas oil is strong. The quantity of material available for spot shipment in Oklahoma is small and there were buyers in the market for all grades. The low cold test, high gravity fuel oil and the low cold test, low flash gas oils are extremely scarce in Oklahoma with a wide demand.

A gas oil of good color and sweet odor with a flash around 200 Fahrenheit is being used widely as a furnace oil. It is claimed that with most burners it gives results comparable with the higher gravity and lower flash distillates. Jobbers are hunting for bargains in distillates for with rare exceptions they are delivering the furnace oils to their customers at a margin which does not show any profit. These better grades of gas oil are bringing 3¼ to 3⅜ cents with a price for the other grades down to 3 cents. The general level of fuel oil prices did not change over the week.

Lubricants and Wax

Reports from representative bright stock manufacturers show that a sellers' market will continue over November. In most cases the manufacturers report they are sold up for the next 30 days and at least two operators have sold their output for the remainder of the year.

The same situation applies in the high viscosity neutrals. Grades of 180 viscosity or higher of good quality are not easily obtainable at the prevailing market.

UMPIRE SATISFIED WITH PROGRESS OF PRORATION

(Continued From page 48)

on any day between October 17 and 28 shall start drilling in three days later and be allowed full production until November 1. All wells shut down on top of the sand on any day between October 29 and November 21, both inclusive, may start drilling in nine days later, and be allowed full production until December 1. All wells shutting down on top of the sand on any day from November 22 to December 15 may start drilling 16 days later and may be allowed full production until January 1. All wells shutting down on top of the sand on any day between December 16 and 31, may start drilling in 16 days later and prorate in accordance with the plan in operation after December 31.

Rules Governing Proration

Mr. Collins in order to clear up all misunderstanding as to the rules governing the proration of Seminole City, Searight, old Earlsboro, Little River in Township 7-6, St. Louis, Mission, Bowlegs, Carr City, Maud, Pearson and Allen has issued this order:

Potentials for November 1 will be arrived at by using the decline curve on each lease.

Production from new wells drilled in since October 16: Take the daily average for October and add this to the original potential as shown by decline curve and the total will be the new potential for November.

Upon the basis of the potentials so determined and established each operator producing oil in the area shall pinch in all his wells to 80 per cent of their potential capacity, this restriction to apply for the period 7 a. m., November 1 to 7 a. m., December 1.

The lease foreman or his representative on each lease in the above described areas is hereby appointed by the umpire as gauger for the purpose of witnessing the gauge of crude oil stock on hand 7 a. m., November 1, on all adjoining leases. It shall be the positive duty of the person so appointed to be present on the lease or leases to be gauged, and witness and verify the correctness of the gauge. The operator and the witness jointly shall file with the umpire a written statement of the crude oil stock on hand.

Operators requested to mail in potential production figures for November by leases at the earliest date possible, also the total amount of oil produced from each lease for the 16-day period, 7 a. m., October 16, to 7 a. m., November 1.

Oil run to storage will be classed the same as pipe line runs.

To establish equality between producing and drilling wells being drilled therein on November 1 and wells commenced in said areas prior to January 1, 1930, a schedule showing shut-down time required is enclosed.

This shut-down time does not include time allowed for the setting of cement used with casing—seven days are to elapse while cement is setting and before resuming drilling. However, companies desiring to take more than seven days shutdown while waiting on cement to set may do so and the additional time over the seven days will be deducted from the required shut-down time. Bailing and testing of the cement before starting to drill out plug is permissible.

AGREEMENT IS REACHED IN CALIFORNIA FIELD

(Continued From page 37)

servation law will ultimately be found constitutional and many of them have announced their intention of actively supporting the State's position. The outcome is problematical but I am of the opinion a temporary restraining order will be issued in the near future unless, of course, the District Court of Appeals should wreck the details by ruling that landowners, mortgagees and trustees of securities are necessary parties to the

action and should therefore be cited as codefendants.

In order to justify statements made from time to time during the past several months that a cut in prices has been warranted, attention is respectfully directed again to the accompanying graph, particularly the lower portion. It will be noted that the storage situation during 1928, so far as refinable crude is concerned, did not show any great change, actual storage figures showing a reduction of 2,314,135 bbls. The current year, on the other hand, has shown substantial consistent accumulation for every month and a further heavy addition to stocks will obviously take place if production continues at a high rate. The drastic slash in crude oil prices will not in itself reduce state production, although it may have a tendency to impress all operators with the seriousness of the situation and bring about a voluntary curtailment. The present situation must be especially humorous to F. C. Van Deinse as he frankly told operators they could expect a very severe reduction in prices if the conservation work undertaken several months ago failed of fulfillment.

Situation at Elwood

Daily production in the Elwood Field of Santa Barbara County has shown a consistent increase during the past few weeks after remaining relatively stable around 20,000 bbls. a day for several months and would, under ordinary conditions, reach a much higher level during the next few months due to aggressive development. Steps have already been undertaken to pinch in production 30 per cent to forestall a downward revision of prices. It is interesting to note that the Union Oil Co., in announcing its new prices for Santa Fe Springs, Long Beach, Seal Beach and Ventura Avenue, refrained from reducing the posted price for Elwood crude because of the cut in price put into effect at Elwood earlier in the year. An informal warning was issued, however, that although the existing price schedule covering this field was not changed at this time, reduced prices comparable with other flush and semiflush pools would be inaugurated if crude oil production in the Elwood Field was not materially and promptly reduced. The Barnsdall and Rio Grande, discoverers and principal operators at Elwood, have been desirous of reducing field production for a long time but have been prevented because of lease requirements. The objection of lessors has been overcome in view of existing conditions and field production is being cut down.

The Barnsdall and Rio Grande issued orders to its field men early in the week to immediately pinch in production and at the same time released a statement setting forth their position. It was to the effect that "The Rio Grande and Barnsdall oil companies announce that they are proceeding to cut their production at their Elwood Field, Santa Barbara, an additional 30 per cent and their lessors are in accord with the policy. The companies have voluntarily reduced their production for the last three months and this is an additional cut. Out of a possible 130 wells the companies have refrained during the last year from bringing in more than 13 from this prolific field. The companies have at all times been heartily in accord with the present conservation movement and believe the entire State will be benefited by every assistance given."

Santa Fe Spring's Output

Santa Fe Springs, unlike the Elwood Yield of Santa Barbara County, is not as susceptible of immediate regulation because of the multiplicity of interests and is expected to reach a higher level during the next several weeks, although field reports indicate the possibility of an artificial curtailment. This projected increase in production is in spite of the fact that the average daily well production in the deep zones below the Meyer horizon has shown a consistent decline from week to week for two months. During the middle of August the average daily well production was around 1,500 bbls., but this subsequently dropped to 1,450 bbls. on September and showed a further decline to 1,300 bbls. on October and is down to 1,200 bbls. at present. The O'Connell is the most productive zone in the Santa Fe Springs Field with a current daily output of 130,000 bbls., but the Clarke zone, now doing 106,000 bbls. daily, will supplant this horizon soon. The Nordstrum and Buckbee zones have ceased to be important factors in field production as they are only yielding 13,750 bbls. and 19,500 bbls. per day respectively. The largest producing well in the Santa Fe Springs Field is No. 7 Wardman of the Superior Oil Co., flowing 6,550 bbls. daily from the Clarke horizon. The Texas Company No. 4 Baldwin, flowing 4,120 bbls. daily from the O'Connell zone, is next, followed by the Union Oil Co.'s No. 11 Howard, another O'Connell zone producer doing 3,505 bbls. a day. The largest well producing from the Buckbee zone is No. 2 Grohs of the Bell View Oil Co., doing 1,850 bbls. daily. The Union's No. 40 Bell, making 1,520 bbls. per day, is the largest producer in the Nordstrum horizon.

DEATH OF HUGH KING, VETERAN OIL OPERATOR

NEW YORK, Oct. 26.—Hugh King, pioneer oil operator and former president of the Columbia Oil Co., died this week in his eighty-seventh year at Chatham, N. Y., after an illness of several months. About the same time a daughter, Miss Mary King, 38 years old, died at the Mayo hospital in Rochester, Minn., where she had been a patient for a month.

Mr. King retired from business four years ago. Born in Ireland, he came to this country as a young man and immediately entered the oil industry, then in its infancy. He was a partner in the founding of the Washington Oil Co. in Long Island City, which he later sold to the Standard Oil Co.

After many years spent in the oil fields of Pennsylvania, Mr. King operated in Oklahoma and Mexico. He is reported to have supervised the drilling of one of the first wells in Mexico. He was one of the founders and for many years a director of the Pure Oil Co., a director of the United States Pipe Lines, and a founder of the Cortez Oil Co. of Tulsa, of which his sons, John and Hugh King, Jr., are now officials.

Returning to New York, Mr. King started the Columbia Oil Co., of which he was president for many years. The company had large refineries at Bayonne, N. J. It sold its business five years ago to the Dutch Shell interests.

Mr. King is survived by four sons and four daughters.

MEXICAN RESOLUTION ON OIL CONCESSIONS

Oil companies holding confirmatory concessions to drill oil in Mexico, and municipalities owning the land covered by these concessions, have been given 90 days from September 20 to agree on the percentage of oil which the oil companies are to receive as owners of the surface, in a resolution issued by the ministry of industry, commerce and labor and of agriculture and development of Mexico.

The Mexican constitution of 1917 declared subsurface materials belonged to the nation. American oil companies contested the constitutionality of the petroleum laws enacted under the constitution. Some, however, rather than continue the litigation, accepted title from the Mexican government, such titles becoming known as "confirmatory concessions."

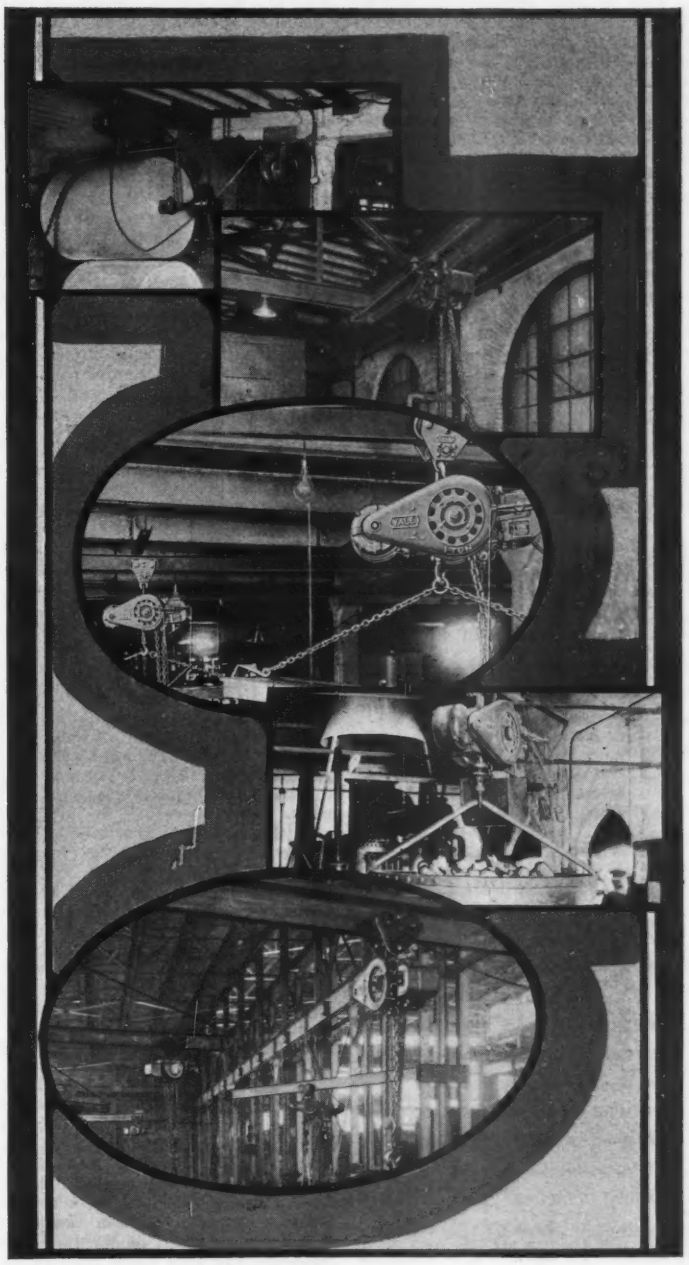
Ejidal dotations, or common grants, were given municipalities by the government, subject to the confirmatory concessions. However, no terms upon which the American oil companies were to take the oil or gas from the ground were prescribed.

The resolution, which was approved by President Gil, is intended to bring the oil companies and the municipalities into agreement.

Failure to reach agreement will result in suspension of the concession, according to the resolution.

TRADE YALE MARK

Yale Ball Bearing Electric Chain Hoists serve many industries with great efficiency and low maintenance.



Yale electric Chain Hoists speed up the time of handling a product and can be found at work in a wide variety of industries: Electric railway shops; Paper printing plants; Metal working plants; Fertilizer plants; the Iron and Steel Industries, etc. ¶ Made in a wide range of sizes and speeds from 1/4 ton to 2 tons capacity. ¶ All Yale Hoists are built from the best materials and by skilled workmen. The name Yale signifies the highest quality product.

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REQUA INSISTS IN REGULATION WITH GOVERNMENT CO-OPERATION

By M. L. Requa*

Production in the United States as practiced today is the outgrowth of years of haphazard effort. Insofar as any co-ordination between the running of the drill and the requirements of the market is concerned, it in no sense meets the national necessity. It is true that this lack of effective co-ordination once sufficed; the unrestricted methods still practiced were probably necessary to encourage the upbuilding of a new industry. But conditions have changed, and the industry no longer needs the old time encouragement, and the necessity for rational regulation insofar as production is concerned, is now so obvious and so universally admitted that it no longer affords subject for reasonable debate. The solution, however, is difficult because of limiting legal obstacles founded primarily on individual rights under the Constitution, states' rights, the migratory character of petroleum, and the fact that oil lands in many cases involve separate ownership of an acre or less in area. If a satisfactory solution is to be arrived at—and it is generally agreed that in the national interest it must be—it can come only by regulation of the industry by the industry, with government co-operation to make effective the necessary rules and regulations. It involves recognition of a theory somewhat novel in American history; to wit, that the welfare of the public is paramount to the welfare of any single individual or corporation, and that it does not follow that because a man has an urge to produce oil that he should be allowed to do so without limitation.

*Before World Engineering Congress, Tokio, Japan, November, 1929.

Control of Industry

This theory, because of the rise of the industrial age with its constantly growing demand for mineral raw materials, will become more and more necessary of rigid application. A moment's reflection will show that modern industry is founded on ample supplies of minerals, and that with their exhaustion will come reversion to the pastoral age, with all that it connotes of profound change. That time may be near or distant, but whatever it may be the fact remains that mineral resources are wasting assets impossible of renewal and should therefore be controlled, to the end that the greatest efficiency be had in production and use. There is no blanket rule that can be applied. Each case is a problem unto itself, and must be treated accordingly. Control should be in the hands of industry, with the power of government available on request to make enforcement possible. This is fundamental. Putting the petroleum industry under direct government control would result in political manipulation and conditions of strife and turmoil far worse than the existing conditions bad as they may be. The lack of scientific development of industrial and governmental co-ordination is without valid excuse.

Future Consumption

It is safe to assume that consumption of petroleum products will go on increasing, unless and until, checked by rising prices, and even this is not likely to affect consumption seriously, save at prices so far above any we now have in view that one might almost be justified in predicting unlimited future consumption increase. To meet the demand, petroleum from wells will, in time, be supplemented by petroleum from coal and later from shale. With both of these minerals the United States is most bounteously supplied. It seems probable, therefore, that the greatest consumer of the product will be able to supply its own requirements from within its own territory for an indefinite period, and at prices that will not seriously affect consumption.

Events indicate that the petroleum industry within the United States will more and more crystallize into three major zones of influence—the one being the Atlantic Seaboard and Gulf Coast, the other the Interior Region, and the third the Pacific Coast. Each of these zones will be supplied with oil from the territory naturally tributary to it; the Atlantic Seaboard and Gulf Coast drawing its oil from South America, Mexico and South and West Texas; the Interior Region from Oklahoma, Texas and adjacent territory, and Wyoming; and the Pacific Coast from California and perhaps West Texas. It is, of course, a question solely of relative values. If California can ship oil to the Atlantic Seaboard at a price with which other fields cannot or will not compete, then the oil will come from California, and the same, of course, holds true of other producing areas.

This great industry, the products of which have so profoundly affected modern civilization, has reached a point where rational co-operation, both national and international seems to be a necessity. The problem as a whole must be viewed not from the standpoint of individuals or corporations, but from the standpoint of governments and national life. In adopting this point of view, the element of time takes on new significance. In the case of individuals and corporations, days, weeks and months may well be the yardstick; while in the case of peoples and governments, years, decades, generations and centuries are the standard of measure. Present day overproduction, not alone in the United States, but in other countries of the world, in no way alters the statement that petroleum must be produced, manufactured into products, and used with the greatest possible efficiency. So far as refining and transportation are concerned, this goal has, as nearly as we can now see, been nearly reached. In production and consumption, however, there is room for enormous improvement that may be summed up in one sentence: Co-ordination between the running of the drill and the requirements of the market, and elimination of useless duplication of distribution facilities.

Petroleum competes with coal to a degree that is without justification. It has been stated that prior to the World War, coal furnished seven times as much of the energy consumed as oil and gas, while in 1928, coal mines furnished only about twice as much energy. This has been possible, of course, only upon a price basis and has forced oil into consumption as fuel that under proper conditions might well have been conserved for higher uses. Incidentally, because of the fierce and unrestrained competition in production, the price structure on petroleum products has been unsatisfactory and recent estimates indicate that for the year 1927 net earnings, after all deductions, were approximately 1 per cent on the estimated ten and a half billions capital. Over a period from 1919 to 1927, inclusive, net returns of little more than 3 per cent are indicated. If to this is added the fact that the consuming public in 1927 paid in state gasoline taxes approximately two and a half times what the petroleum industry received in profits, the picture is fairly complete and equally unsatisfactory.

World Agreement

That national and international agreement should be undertaken having for their objective determination of zones of influence and allocation of output, seems worthy of serious consideration. Stated in its simplest fundamentals, the world is dealing with an exhausting and irreplaceable product that is of prime importance in modern civilization. Such a policy, therefore, should be adopted as will give the product to the public at a reasonable price, and over the longest possible length of time. Such policy must comprehend the maximum of efficiency in all branches of the industry, from production to ultimate consumption.

Looking back upon the developments of the Twentieth Century, the greatest single outstanding fact is probably the part that scientific research has played in the advancement of the industry. Science has been called upon with increasing frequency to point the road, but little has been done to promote scientific co-operation for the elimination of the industry's greatest weakness—that is, the lack of scientific control of production to the end that it may be balanced within reasonable limits with the requirements of the market. Such international agreements must, of course, be worked out by the industry with sympathetic government co-operation, and it may be well that governments as between themselves will formulate rules and regulations within the limitations of which the petroleum industry will be free to operate.

Government Supervision

It is certain in matters of international relationship that the petroleum industry cannot and will not be left entirely free of government supervision. It is all part of the world picture of mineral supply to meet future needs. For petroleum the struggle will be most intense. The uses to which it is applied are fundamental. Efforts of each leading nation to control these sources will involve friction, ultimately most dangerous in character, unless some plan is adopted by which national interests may be harmonized. The sea and air will not be free to all nations for purposes of international commerce unless supplies of fuel oil and gasoline are made available to all at reasonable rates and on equal terms without discrimination. The American petroleum industry has shown its ability to meet any crisis that has arisen in the past. Its war service is a priceless heritage that may be well handed down from generation to generation with pride and satisfaction. It has faced apparently unsurmountable obstacles, and successfully overcome them. It has grown to such gigantic proportions that it is now faced with another problem, the solution of which is of first importance. I refer to international co-operation in bringing the industry into balance so that it may perform satisfactorily its function in modern civilization that has over the years grown by leaps and bounds to a point where the old individualism must give way to the spirit of co-operation.

LEGAL

NOTICE OF SALE OF OIL AND GAS LEASES ON PART OF UNIVERSITY LANDS

Pursuant to the provisions of Chapter 282 of the General and Special Laws of Texas passed at the Regular Session of the Forty-first Legislature approved March 29, 1929, the Board for Lease of University Lands hereby offers for sale, subject to the right to reject all bids, upon sealed competitive bids in Austin, Texas, at the General Land Office November 7, 1929, at 10 o'clock a.m., the oil and gas rights in and under the following described University lands:

1. SE ¼ of SE ¼ Section 14, Block 18, Pecos County;
2. S ½ of NE ¼ Section 1, Block 35, Ector County;
3. S ½ of NW ¼ Section 1, Block 35, Ector County;
4. S ½ of NE ¼ Section 2, Block 35, Ector County;
5. S ½ of NW ¼ Section 2, Block 35, Ector County;
6. S ½ of NE ¼ Section 3, Block 35, Ector County;
7. S ½ of NW ¼ Section 3, Block 35, Ector County;
8. NW ¼ of Section 11, Block 35, Crane and Ector Counties;
9. SW ¼ of Section 11, Block 35, Crane County;
10. NE ¼ of Section 12, Block 35, Crane and Ector Counties;
11. NW ¼ of Section 12, Block 35, Crane and Ector Counties;
12. SW ¼ of Section 12, Block 35, Crane County;
13. SE ¼ of Section 12, Block 35, Crane County;
14. SE ¼ of Section 13, Block 35, Crane County;
15. NE ¼ of Section 14, Block 35, Crane County;
16. SE ¼ of Section 14, Block 35, Crane County;
17. SW ¼ of Section 14, Block 35, Crane County;
18. Section 1, Block "A," Hudspeth County;
19. Section 2, Block "A," Hudspeth County;
20. Section 3, Block "A," Hudspeth County;
21. Section 10, Block "A," Hudspeth County;
22. Section 11, Block "A," Hudspeth County;
23. Section 12, Block "A," Hudspeth County;
24. Section 13, Block "A," Hudspeth County;
25. Section 14, Block "A," Hudspeth County;
26. Section 15, Block "A," Hudspeth County.

As to the lands in Ector, Pecos and Crane Counties, the Board has fixed a minimum yearly rental of not less than One Dollar per acre and a royalty of not less than one-sixth. As to the lands in Hudspeth County, the Board has fixed a minimum annual rental of not less than 50 cents per acre and a royalty of not less than one-eighth, all leases to run for a period of three years.

Blank applications for purchase and form of lease prescribed by the Board may be had by applying to the Secretary of the Board at the General Land Office.

Dated at Austin, Texas, this 21st day of October, A. D. 1929.

BOARD FOR LEASE OF UNIVERSITY LANDS.
By: Edward Crane, Chairman,
Robert L. Holliday,
J. H. Walker, Members of Board.

STRAIGHT HOLE ARTICLE DISCUSSED BY INVENTOR

The following discussion of J. T. Hayward's article on "Theory of Tension in Drill Pipe in Drilling of Straight Hole," Page 147, issue of The Oil and Gas Journal of October 17, has been submitted by C. E. Reed, founder of the Reed Roller Bit Co. and now acting as consulting engineer with the Chicago Pneumatic Tool Co. It is hoped that other discussions will be submitted covering Mr. Hayward's article. They will be given space in The Oil and Gas Journal promptly.

"May I suggest Mr. Hayward's idea should not only be included in data in crooked hole investigations, but should be carried further to include the results of the angularly disposed outlets in bits.

"'A vessel of water suspended by a cord hangs perpendicularly, but if a hole be opened on one side so as to allow the water to jet out there, the vessel will be pushed to the other side by the reaction of the jet, and will so remain while the water flows. If the hole be oblique, the vessel will constantly turn round.' Arnott Element of Physics.

"All rotary drill bits in common use have outlets angularly disposed, and rock bits commonly used have a barrier disposed at the bottom of the hole in the path of the fluid, so that fluid has not jetted the bottom, but is delivered against the side of the hole with force (Hayward) of 290 pounds per square inch at the bit. Under the first laws of motion the reaction, 290 pounds per square inch, is a constant force applied on the body of the rotary bit to push it out of vertical and in my opinion is a prime cause of rotary crooked holes."

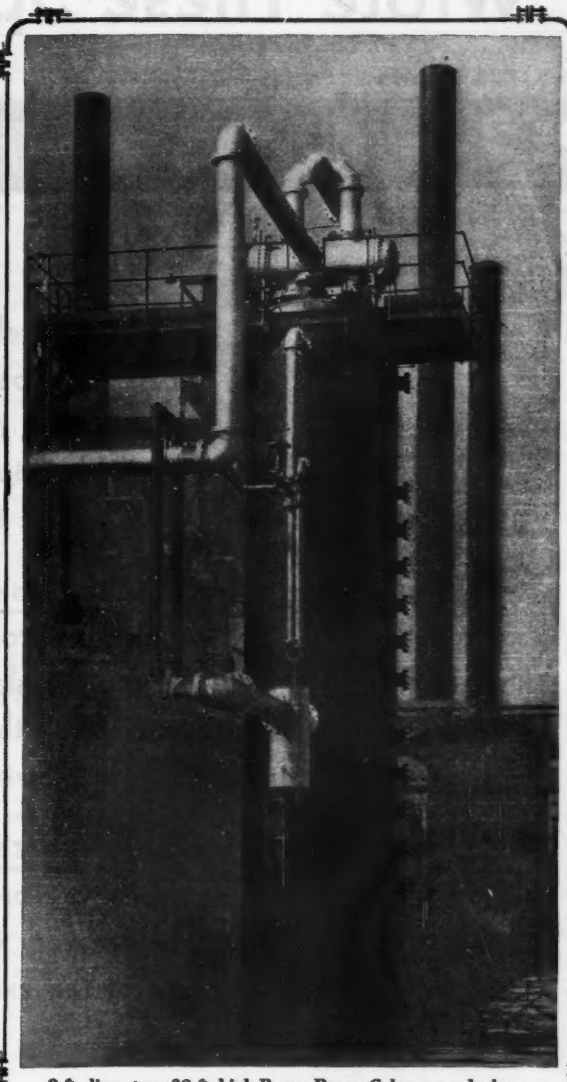
MARKET IN GERMANY FOR AMERICAN OIL BURNERS

By Charles E. Kern

Washington Bureau, The Oil and Gas Journal

WASHINGTON, D. C., Oct. 28.—American oil burners are destined to have a large market in Germany in the near future according to information that has come to the Department of Commerce from its correspondents abroad. At the present time central heating is not so commonly used as in the United States but would seem to offer possibilities of development in the near future. In such large and modern cities as Berlin, Hamburg and Frankfort, however, modern methods are being adopted rapidly, 40 to 50 per cent of the apartment houses and offices being equipped with central heating. In most of the other buildings stoves are used for heating purposes.

There should be no technical difficulties in equipping almost any building in Germany with a central oil heating plant, as practically every house is provided with a basement or cellar where the burner could be installed. A large number of new apartment houses have been constructed recently especially in the poorer residential sections where the housing situation has been most acute and there is now a tendency to heat several such buildings from a central point



8 ft. diameter x 38 ft. high Braun Rerun Column producing aviation gasoline overhead and white spirits bottom.

The PRINCIPLES applied by Braun in solving refinery fractionation problems have been substantiated by the eminently successful results obtained. The purchaser of Braun Bubble Cap fractionating columns is assured that specified products will be made from the time the column is first operated.

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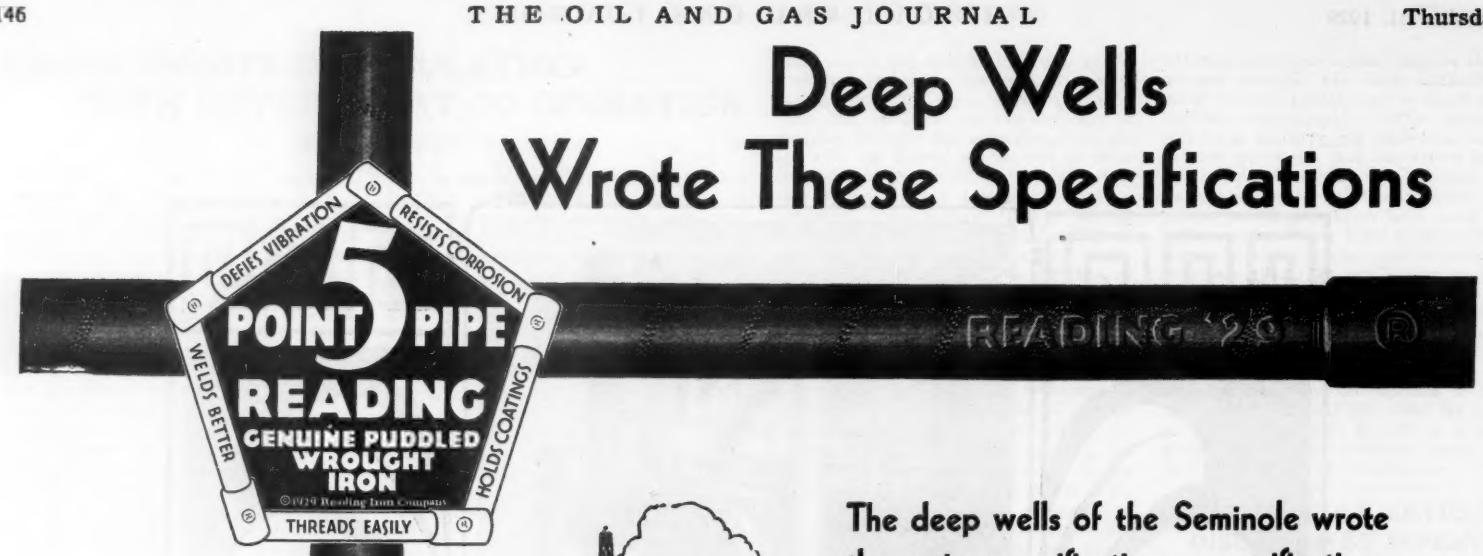
TULSA Kennedy Bldg. · **SAN FRANCISCO** Russ Building. · **DALLAS** Republic Bank Bldg

Deep Wells Wrote These Specifications



As an added improvement all Reading Galvanized Couplings for Reading 5-Point Tubing are now furnished with galvanized threads.

Reading tubular goods are furnished in sizes ranging from 1/8" to 20" in diameter

Reading pipe distributed by: Frick-Reid Supply Corp., Bradford Supply Co., Republic Supply Co., Superior Tube Co., Reading Iron Co. of Texas.

The deep wells of the Seminole wrote these pipe specifications—specifications so exacting that only completely dependable pipe, like Reading 5-Point Pipe, will fit them.

1. Great Resistance To Corrosion—the puddling process coats every inmost fiber of Reading Pipe with silicious slag, presenting an effective barrier to the accelerated corrosion that comes from acid water and from compressed air or gas flowing.

2. Ability To Resist Sucker Rod Wear—experience has shown that the structure of Reading Pipe prevents rods from wearing through the pipe walls, even in very crooked holes. Wear on joints is cut down because of the excellent threading qualities of Reading Pipe.

3. Immunity To Vibration—Reading Pipe cannot crystallize under the continued vibration caused by deep well flowing or pumping; the tough, fibrous structure of this pipe minimizes "fatigue".

To get these pipe advantages, insist on Reading Genuine Puddled Wrought Iron Pipe, made by the time-tested puddling process. The Reading name, date of manufacture and cut-in spiral knurl mark are your guarantees of 5-point protection.

READING PIPE

GENUINE PUDDLED WROUGHT IRON

READING IRON COMPANY, Reading, Pennsylvania

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Of Interest to Sales Departments

Expect Shipments West Coast Motor Fuel to Increase

NEW YORK, Oct. 28—California motor gasoline, already a dominant factor in East Coast markets, is expected to become a still greater influence upon the Atlantic Coast trade as a result of last week's drastic reductions in California crude oil prices. At present levels for "sweet" crude in the Los Angeles basin fields, California refiners are at a distinct advantage over both Atlantic seaboard and Mid-Continent refiners in the matter of crude costs, and Pacific Coast refiners are expected to run their refineries at close to capacity to take advantage of this favorable position, with the bulk of their surplus production destined to move into consumption in the East.

Receipts of California gasoline during the third quarter of the year at East Coast refineries showed an increase of more than 36 per cent over those for the comparable period in 1928, and current indications are that shipment figures for the closing quarter of the year, when available, will show a still greater percentage increase. The East Coast area has now become a recognized marketing area for California refiners, and the latter have exploited this territory thoroughly.

Receipts of California gasoline at Atlantic and Gulf Coast ports (almost entirely the former) for the third quarter of the year were as follows:

	Bbls. of 42 Gallons	
Week ending—	1929	1928
July 6	610,000	158,000
July 13	382,000	253,000
July 20	328,000	638,000
July 27	328,000	161,000
August 3	821,000	331,000
Augus. 10	349,000	545,000
August 17	333,000	288,000
August 24	412,000	435,000
August 31	529,000	144,000
September 7	260,000	.....
September 14	395,000	143,000
September 21	690,000	599,000
September 28	217,000	441,000
Total	5,654,000	4,136,000

The gasoline situation in the East at the present time presents a peculiar situation and illustrates the extent to which the Atlantic Coast refiners have become dependent upon outside sources for gasoline supplies to supplement their own production to take care of marketing requirements.

Gasoline Stocks Low

Gasoline holdings at East Coast refineries, from reliable reports, are extremely short.

Stocks of gasoline held at East Coast refineries at the middle of the current month, according to A. P. I. statistics, totaled 4,429,000 barrels, with California refiners holding at the same time a total of 13,120,000 barrels. These latter holdings represented more than 40 per cent of the gasoline stocks of the entire United States.

Recent developments in the Eastern gasoline situation have indicated that Venezuelan gasoline was destined to rival California motor fuel as a factor in the East Coast market position. This viewpoint was based upon the increasingly large shipments on the part of Pan American Petroleum & Transport Co. from its new refinery at Aruba, D. W. I., and the growing importance in the East of Shell Eastern Petroleum, which has been receiving part of its supplies of motor fuel from Royal Dutch refineries at Curacao and other points in the Dutch West Indies.

California Position

With the cut in California crude prices, however, it appears that California gasoline interests will be able to hold their

(Continued on Page 148)

CLEVELAND, OHIO, TO HAVE LARGEST SERVICE STATION

The Sinclair Consolidated Service Corp. has completed plans for the construction of what probably will be the largest service station in the United States. The station will occupy a site of approximately two acres in Cleveland, Ohio, between Euclid and Carnegie Avenues.

The station, which will be of the "one-stop" type, will occupy the entire tract. It is the second station to be announced by the new Sinclair corporation which was organized recently to build and operate stations of this type. Last week the corporation announced plans for the construction of a large station at Chicago. The stations are designed to incorporate practically every service desired by the automobile owner with the exception of garage repair.

More Information Needed Regarding Bus Motor Fuels

Oil refiners co-operating with automobile manufacturers should work out some uniform and reliable method for determining the best grade of motor fuel for the various types of motor vehicles and equipment in use according to Adrian Hughes, Jr., superintendent of bus transportation for the United Railways and Electric Co. of Baltimore. Mr. Hughes, Jr., in a paper on "Fuel Specifications from the Purchaser's Standpoint" at a meeting of the Pennsylvania section of the Society of Automotive Engineers explained the experiments his company had conducted in regard to motor fuel performance.

His company through the Baltimore Coach Co., an operating subsidiary operates a fleet of 122 vehicles. The fleet includes eight distinct types of engines. The operation is entirely city with the exception of the chartered business and covers about 2,500,000 bus miles per year. The company has used various types of motor fuel and at present is operating with a blend of 35 per cent benzol and California gasoline. The benzol must be of a grade that not less than 80 per cent by volume shall distill below 212 degrees Fahrenheit and its endpoint shall not exceed 300 degrees Fahrenheit. The blended motor fuel is required to have an initial boiling point during the months of November, December, January, February and March not above 125 degrees Fahrenheit, and during the months from April 1 to October 31, not above 132 degrees Fahrenheit, and the endpoint not above 420 degrees Fahrenheit. The finished fuel is required to yield upon distillation not less than 85 per cent by volume at 360 degrees Fahrenheit and not less than 95 per cent by volume at 405 degrees Fahrenheit. The maximum sulphur content shall not be greater than 0.15 per cent.

In his paper Mr. Hughes states that there is need for more research work covering the particular requirements of bus operators and other large consumers of motor fuel. He predicts that specification for gasoline for this class of consumers in the future will require:

First: The ability to give good starting at the lowest temperature in which they are subjected, to be determined by temperature at the 10 per cent point of the

(Continued on Page 148)

WILL MANUFACTURE NEW TYPE ASPHALT SHINGLES

NEW YORK, Oct. 26.—Warner-Quinlan Co., one of the largest independent oil producing and refining companies operating in the East Coast area, will shortly diversify its activities through the manufacture of a new type of asphalt shingle. The company will place on the market by the end of the year a tapered mastic (asphalt) shingle the company claims is far superior to any asphalt shingle now made. The new shingle is made with a heavy butt end, and is said to give a shadow-line on the roof, very similar in appearance to the effect of an old English slate shingle.

Manufacturing processes on the new asphalt shingle, controlled by Warner-Quinlan Co. through exclusive patents, are said to be extremely simple, and the company will not only manufacture the shingle itself for distribution in the East, but will license roofing companies in other parts of the country to make the shingle on a royalty basis. The shingles, it is said, can be made at about 33⅓ per cent of the cost of wooden or asbestos shingles, and about 25 per cent of the cost of slate shingles.

TWO SINCLAIR TANKERS

The Sinclair Refining Co. has signed a contract with the Bethlehem Shipbuilding Corp. for two 8,400 deadweight tons steel tankers. These boats will be named the Harry F. Sinclair, Jr., and the Virginia Sinclair, after the two children of Mr. H. F. Sinclair, chairman of the board of directors of the Sinclair Consolidated Oil Corp.

The new tankers are primarily for carrying refined products from Gulf ports to refineries and terminals of the Sinclair Refining Co., on both the Gulf of Mexico and the Atlantic seaboard. Two self-propelled coastal barges for delivering gasoline along the coast will also be ordered by the Sinclair company from the Bethlehem company.

The vessels are designed to carry 8,400 tons deadweight on a draft of 24 feet. The speed, fully laden, will be 13 knots an hour.

ISSUE CODE FOR TANK SHIPS

NEW YORK, Oct. 26.—Rules insuring safety in loading and discharging petroleum cargoes of tank ships are provided in a Suggested Code of Good Practices for Safe Loading and Discharging of Oil Tankers issued by the American Petroleum Institute. The code, one of several sponsored by the institute working in co-operation with oil companies throughout the United States, was developed by the institute's General Committee on Fire Prevention and was approved by the Executive Committee of the board of directors early this month.

Provisions of the code cover ship and terminal operations prior to loading and discharging of cargo, loading and discharging operations, operations after loading or discharging, fighting fires at terminals, cleaning ship's tanks and freeing ships of gas, and maintenance of marine terminals.

NEW PIERCE TERMINAL

The Pierce Petroleum Corp. will start construction immediately of a Pierce terminal at Oklahoma City, Okla., on Highway 66. The terminal will be similar to that built at Tulsa and other points, involving an expenditure of approximately $250,000. The terminal combines a complete "one-stop" station service with restaurant and rest room accommodations.

Marketing Branch Discovers Outlets For New Products

The marketing branch of the oil industry is constantly finding new uses for products manufactured from crude petroleum according to a report of the Bureau of Mines. The refining branch of the industry for some time has known that many of these products were obtainable in their operation but new processes could not be placed on a commercial basis until outlets were found.

The reports point out that certain refined fractions are now being used in the manufacture of foodstuffs substituting for other materials which had been utilized for many years. The list of special products extends from the lightest hydrocarbons of the crude oil to the heavy ends of the crude oil.

Hydrocarbon gases, light, intermediate, and heavy distillates, residues, and refinery sludges are the products into which petroleum is first turned. Hydrocarbon gases are then made into liquefied gases, petroleum ether, alcohols, gas black, fuel gas, and light naphthas. Liquefied gases are used in metal cutting and for illumination. Petroleum ether is used in laboratories and for priming motors. Alcohols are used, according to the Bureau, in lacquers, soaps, phenol, gums and resins.

Gas black is used in making rubber tires, inks, and paints. Fuel gas, as its name implies, is used for fuel. Light naphthas, as well as naphthas obtained along with refined oils from light distillates, are made into light, intermediate and heavy naphthas. It is from the intermediate and heavy naphthas that gasoline is obtained.

Special Naphthas

Gasoline is used not only as fuel in motor boats, motorcycles, trucks, airplanes, automobiles, tractors and stationary engines, but also as a solvent for dry cleaning, in linoleum manufacturing, in the leather industry and for heating. Other products of intermediate and heavy naphthas are commercial solvents, such as rubber and fatty oil solvents, blending naphthas, dyers' and cleaners' benzine, naphthas used by varnish makers and painters, turpentine substitutes and soaps.

Light naphthas are made into gas machine gasoline for domestic illumination, pentane for candlepower standardization, hexane for laboratory uses, and chemical solvents for drug extraction. Refined oils, according to information provided

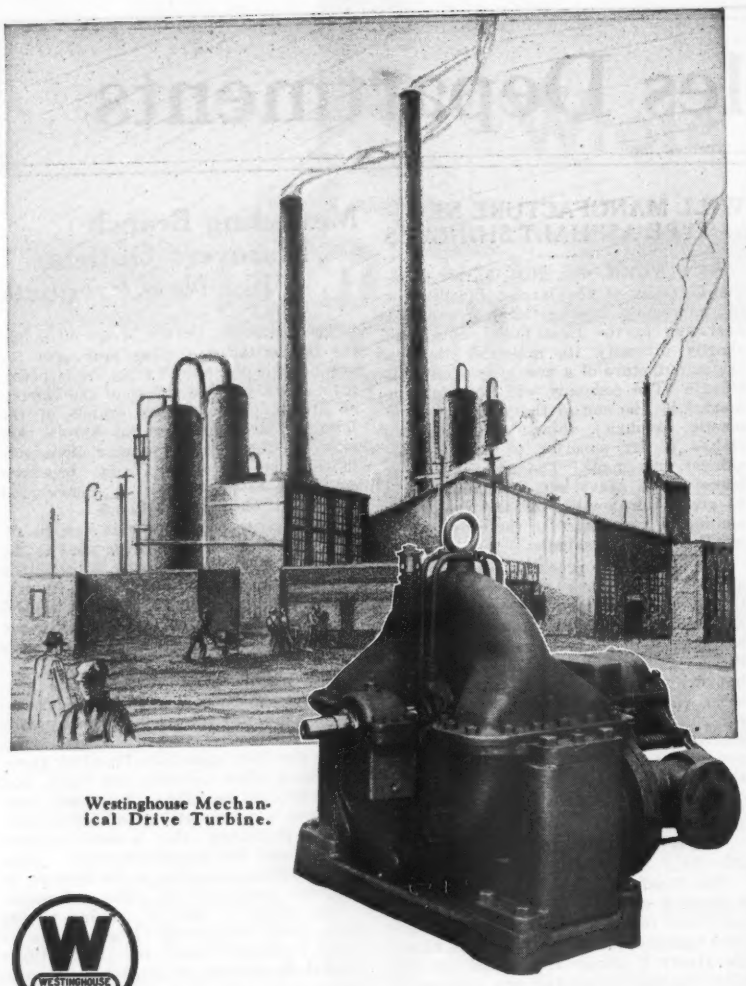
(Continued on Page 148)

NATIONAL BUYS STATIONS

NEW YORK, Oct. 26.—National Service Co. has acquired the business of the Bushfield Oil Co. and will expand the operations of the latter company as a subsidiary.

Bushfield Oil Co. will be used for distributing gasoline, motor oils and industrial and furnace oils through the territory now served with ice and coal by the National Service companies, this territory extending from Portland, Maine, to New York City. Through another subsidiary, Westchester Service Corp., National Service is already extensively engaged in the fuel oil business in Westchester County, N. Y.

John A. Bushfield, president of the Bushfield Oil Co., will supervise the expansion program, and the remainder of the Bushfield organization will continue. Lester M. Henderson, for the past nine years connected with the Beacon Oil Co., has been elected vice president and a director of the Bushfield Oil Co. and will join the organization November 1.



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Mechanical Drive Turbines

WESTINGHOUSE type "AMD" turbines offer many advantages for operating your refinery pumps.

The turbine is supported at the center line. This maintains alignment.

The glands are water sealed, consequently no packing to replace.

An emergency overspeed governor is included with every turbine.

These and many other features are fully described in Leaflet 3907-C. Write our nearest office for a copy.

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EXPECT SHIPMENTS OF FUEL TO INCREASE

(Continued from Page 147)

own in any competition which Venezuelan gasoline may afford. Thus, East Coast refiners find themselves between two fires.

Relief from the heavy receipts of California gasoline appeared in sight during the summer months, when the ocean tanker charter rate soared to the highest levels attained for a number of years back. The high charter rate, it was felt, would also adversely affect the cost of shipments of Venezuelan gasoline, in favor of East Coast refineries. During recent weeks, however, the charter market has been slipping, and the new advantage which has accrued to California refiners as a result of the drop in crude oil prices has more than offset any higher market for ocean transportation of their surplus gasoline to the Atlantic seaboard.

MORE INFORMATION IN BUS MOTOR FUELS

(Continued from Page 147)

A.S.T.M. distillation curve and the slope of the curve at this point.

Second: That at the 50 per cent point the curve be low enough to give satisfactory acceleration conditions.

Third: A high enough temperature at the 90 per cent point to give ample power when required. It must also have low knock value and a sulphur content not to exceed 0.10 per cent.

MARKETING BRANCH DISCOVERS OUTLETS

(Continued from Page 147)

by the Bureau, furnish kerosene for lamps, stoves and motors, oil to be used in railroad signals or lighthouses, and mineral seal oil for coach and ship illuminants and gas absorption.

From intermediate distillates are obtained gas oil and absorber oil. The latter is used for gasoline and benzol recovery. The former is used in carburetion of water gas, for cracking into gasoline, for metallurgical fuels and fuels for industrial establishments, furnaces, Diesel engines, power plants, locomotives and ships, and for heating and lighting.

Heavy Distillates

Heavy distillates are subdivided into technical heavy oil, wax and lubricating oil. Technical heavy oil produces white oils and white oils are divided into technical and medicinal oils. From technical oil is manufactured oil for bakers' machinery, candy makers' oil, fruit packers' oil, egg packers' oil and slab oil. The medicinal oils are used externally in salves, creams and ointments and are also taken internally.

Also obtained from technical heavy oils are saturating oils for wool and twine, emulsifying oils for cutting, electrical oils for switches and transformers and flotation oils used in metal recovery processes.

Waxes are made into still wax, wax tailings and roofing material, into candy makers' wax, candle wax, detergent and ironing wax for laundering purposes, sealing wax, etchers' wax, saturating wax used in cardboard, match and waxed paper making, chewing gum wax, wax for medicinal purposes, for electrical insulation and the canning industry.

Lubricating oils, which come from residues, as well as heavy distillates, are made into floor oil, meter oil, sewing machine oil, spindle oil, knitting oil, cylinder oil, tractor oil, airplane oil, auto oil, air compressor oil, gas engine oil, red engine oil, dynamo oil, turbine oil, harvester oil, ice machine oil, journal oil, black oil, compounded oil which is water soluble, and grease compounding oil for making greases for general lubrication.

Residual Oils

Residues, in addition to furnishing lubricating oils, also provide grease, residual fuel oil, pitches and road oils and coke. Grease is made into petrolatum for medicinal uses in compounded products, salves, creams, ointments and petroleum jelly and into petrolatum for technical purposes such as coating metal and lubricating. Grease is also made into gear grease, cup grease, axle grease, cable grease, elevator grease, transmission grease, launching grease, railway grease, track grease, fiber grease and paper mill grease.

Residual fuel oil is used as boiler fuel and in gas manufacture. Pitches and road oils are made into oxidized and steam reduced asphalts. The asphalts, in turn, are utilized for pipe covering, insulation, in roofing paper, shingles, paving, protecting metal, waterproofing, felt saturating, rubber making, briquetting, and in plastic composition.

Coke is used in making calcium carbide, artists' crayons, graphite, carbon electrodes, battery carbons, electric light carbons, fuel briquettes, and as a domestic fuel. Acid coke, obtained from refinery sludges, is also employed as a fuel. Besides acid coke, refinery sludges are also the source of sulphonic acid used in saponification and de-emulsifying agents; oils and pitches used in fuel oil, asphalts, saturants and binders; and sulphuric acid for use in manufacturing fertilizers.

U. S. SUPREME COURT UPHOLDS OXFORD LAW

WICHITA, Kans., Oct. 26.—Final approval by the highest court of the famous City of Oxford ordinance which sought to regulate the drilling of oil wells on a townsite, was made this week when the United States Supreme Court refused the petition of G. L. Ramsey and others for a writ of certiorari by which they had hoped to get the matter reviewed by that court.

For more than two years the drilling and producing companies have fought the various cases through the state and federal courts, only to lose at each hearing. The courts held the city had a right to regulate the drilling of wells within its borders.

The ordinance provided but one well should be drilled to each city block and then only after a permit had been granted by city officials and that the production should be prorated among the property holders, whether all had entered into the lease or not.

The state supreme court sustained the lower court in holding the ordinance valid. Judge George T. McDermott, in an opinion handed down while he was serving in the United States district court for Kansas, held the ordinance was valid. His judgment was sustained by the circuit court of appeals in an opinion written by Judge Lewis, now presiding in the new tenth circuit court.

The ruling of the higher court settles the question for all time and sets a precedent for other cities and towns.

The ordinance also provided for a fine of $100 for failure to prorate production.

Oxford now will proceed to collect the fines, said by Mr. McCorkle, who represented the City of Oxford, to run into many thousands of dollars. Among the operators against whom claims will be filed are G. L. Ramsey, C. A. Marrs, Tom Fine, Jess Moore, the Derby Oil Co. and others.

OIL EXPLORATION IN SALVADOR

A well is being drilled for petroleum near Zacatocoluca, El Salvador, to the southeast of San Salvador. It is stated that good indications of oil already have been encountered and that a large storage tank which it is estimated will hold the flow from the well for a period of 15 days is soon to be constructed. As the soil around the place where the well is being drilled is volcanic and subject to earthquakes, the more conservative are extremely skeptical with regard to the project.

SHELL PLANT IN DOMINICA

The Shell Co., Ltd., is planning to start the construction of a plant, including tanks, warehouses, etc., in the Dominican Republic. The plant will be constructed on the western bank of the Ozama and it is estimated will cost $20,000.

It is throwing away money to discard even small quantities of "CUT OIL" or "B.S."

GEORGE WASHINGTON
once threw a silver dollar across the Potomac River—and probably lost it. But he gained a lasting fame for the feat.

Oil producers have nothing to gain by throwing away a dollar's worth of oil.

DISCARDING any petroleum emulsion which contains as much as a barrel of oil is just like throwing away the price of a barrel of oil.

Every drop of oil can be recovered by the Tret-O-litE Process . . . at a cost low enough to make it profitable to treat even small quantities.

In every district there is a Tret-O-litE representative who will gladly help you solve any treating problems.

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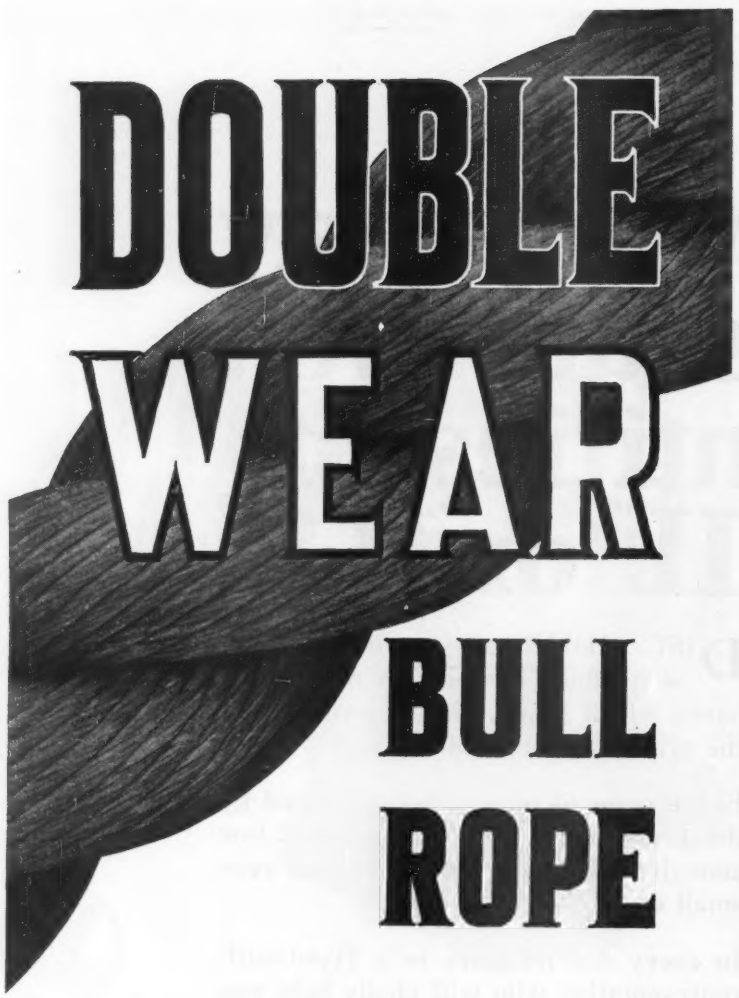

A REMARKABLE feature has been achieved in Double Wear Bull Rope—long service at low cost.

At the price for which it sells, Double Wear is the most economical Bull Rope to buy. It is Double Wear both in name and in actual use.

The Columbian Rope Company has really done something for drillers in giving them this Pure Manila Bull Rope at a low cost. The drillers in turn appreciate it and show their appreciation by purchasing Double Wear Bull Ropes in enormous quantities.

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"Drill with Manila"

CALIFORNIA FIELD OPERATIONS FOR MONTH OF SEPTEMBER, 1929

According to figures collected by the American Petroleum Institute, Pacific Coast office, the total production of crude oil in California for September amounted to 26,104,264 bbls., an average of 870,142 bbls. per day. This is a decrease of 8,353 bbls. per day under August production.

Total stocks of crude and all products in Pacific Coast territory increased during the month 5,133,154 bbls. The total stocks at the end of the month were 180,184,822 bbls. The total stock increase for 1929, up to September 30, was 40,183,928 bbls. Comparative figures as of September 30, 1929, August 31, 1929, and September 30, 1928, are shown in detail in this report.

Eighty-eight wells were completed during the month with an initial daily production of 114,991 bbls., compared with 64 wells completed during August with an initial production of 106,710 bbls.

PRODUCTION

(Figures of production and stocks are in barrels of 42 gallons)

District—	Barrels per month	Daily average Sept., 1929	Aug., 1929	Sept., 1928
Kern River	506,198	16,840	15,338	5,833
Mount Poso	214,618	7,154	5,276	286
Fruitvale	56,553	1,885	1,948	348
Round Mountain	34,162	1,139	730	112
McKittrick	136,053	4,535	4,650	4,937
Midway-Sunset	2,041,086	68,036	66,436	72,858
Elk Hills	523,199	17,440	17,436	21,054
Lost Hills-Belridge	128,688	4,290	4,070	4,035
Coalinga	284,110	9,570	10,014	10,476
Kettleman Hills	185,804	6,193	4,042	.....
Wheeler Ridge	19,868	662	650	907
Watsonville	1,875	63	63	61
Santa Maria	118,110	3,937	4,286	4,983
Summerland	12,792	426	385	115
Elwood-Goleta	618,988	20,633	21,723	2,520
Santa Barbara	500	17	27	.....
Rincon	89,881	2,996	3,140	4,115
Ventura Avenue	1,849,034	61,634	62,040	54,313
Ventura-Newhall	149,212	4,974	4,906	5,695
Los Angeles-Salt Lake	44,764	1,492	1,557	1,482
Whittier	45,895	1,530	1,562	1,636
Fullerton (Brea Olinda)	384,354	12,812	12,386	17,057
Coyote	331,398	11,047	11,409	12,976
Santa Fe Springs	8,426,817	280,894	281,501	37,360
Montebello	281,580	9,386	9,822	11,535
Richfield	452,554	15,085	15,209	17,036
Huntington Beach	1,279,255	42,642	43,654	52,240
Long Beach	5,096,292	169,876	175,044	197,999
Torrance	392,147	13,072	13,349	16,543
Dominguez	249,306	8,310	9,390	10,682
Rosecrans	220,055	7,335	6,979	6,112
Inglewood	684,705	22,824	23,522	28,367
Newport	1,200	40	40	16
Seal Beach	1,188,755	39,625	43,876	26,244
Potrero	25,333	844	624	339
Lawndale	27,123	904	1,411	.....
Total	26,104,264	870,142	878,495	630,272
August	27,233,353	878,495	.....	.....
Decrease	1,129,089	8,353	.....	.....

STOCKS

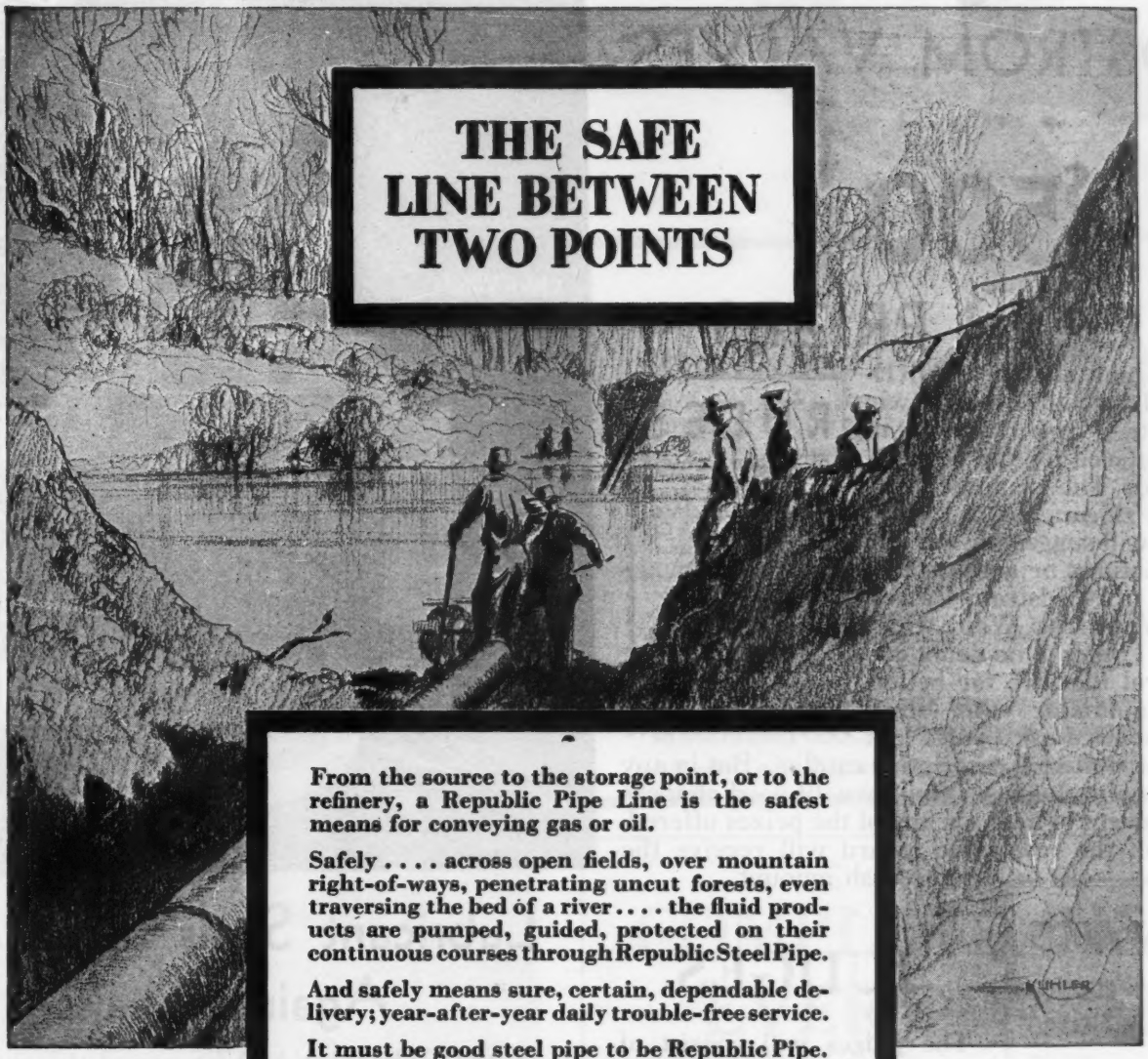
	Sept. 30, 1929	Aug. 31, 1929	Sept. stock increase	Sept. 30, 1928
Heavy crude, heavier than 20° A.P.I., including all grades of fuel	110,812,803	109,213,315	1,599,488	97,690,674
Refinable crude, 20° A.P.I., and lighter	40,711,584	37,776,164	2,935,420	17,730,034
Gasoline	15,223,742	14,990,912	232,830	11,351,695
Naphtha distillates	3,287,087	2,877,322	409,765	1,255,309
All other stocks	10,149,606	10,193,955	*44,349	10,079,930
Total all stocks	180,184,822	175,051,668	5,133,154	138,107,642

*Decrease.

DEVELOPMENT

District—	New rigs up	Active drlg.	Comp.	Daily initial output	Active producing	Abd. wells Drillers	Abd. wells Producers
Kern River	3	7	5	1,090	1,118	..	..
Mount Poso	5	5	10	1,890	37	1	2
Fruitvale	1	4	1	125	8	..	..
Round Mountain	..	3	1	200	7	..	..
McKittrick	..	2	..	.....	281	..	..
Midway-Sunset	9	33	5	3,875	2,138	..	..
Elk Hills	..	1	..	.....	210	..	..
Lost Hills-Belridge	..	2	..	.....	306	..	..
Coalinga	..	4	..	.....	753	..	..
Kettleman Hills	2	31	..	.....	3	..	..
Wheeler Ridge	..	..	..	.....	33	..	..
Watsonville	..	..	..	.....	6	..	..
Santa Maria	..	5	..	.....	228	..	1
Summerland	5	4	1	150	92	..	..
Elwood-Goleta	3	7	1	3,750	12	..	..
Santa Barbara	..	1	..	.....	2	6	..
Rincon	..	5	..	.....	29	..	..
Ventura Avenue	2	29	5	7,956	182	..	..
Ventura-Newhall	3	17	2	285	512	2	2
Los Angeles-Salt Lake	..	..	..	.....	316	..	..
Whittier	..	..	..	.....	166	..	..
Fullerton	..	..	1	175	370	..	..
Coyote	..	2	..	.....	205	..	..
Santa Fe Springs	10	175	28	78,510	490	..	1
Montebello	..	4	..	.....	174	..	..
Richfield	4	9	3	532	280	..	..
Huntington Beach	..	9	2	260	546	2	2
Long Beach	18	76	17	11,398	974	..	1
Torrance	..	..	..	.....	601	..	..
Dominguez	1	1	..	.....	56	..	..
Rosecrans	..	..	1	275	104	..	..
Inglewood	1	..	1	180	227	..	..
Newport	1	2	..	.....	3	1	2
Seal Beach	..	6	2	1,740	154	..	..
Potrero	3	4	2	2,600	5	..	..
Lawndale	..	..	..	.....	7	5	..
Miscellaneous drilling	11	142	..	.....	.....	11	..
September	82	590	88	114,991	10,635	28	11
August	118	598	64	106,710	10,489	28	14
Increase	*36	*8	24	8,281	146	..	*3
Average for year 1928	107	520	59	56,802	10,823	15	25
Average for year 1927	97	404	75	39,992	11,276	23	21
Average for year 1926	95	422	76	32,635	11,288	24	17
Average for year 1925	105	417	79	42,247	11,393	28	12
Average for year 1924	103	510	103	42,412	10,903	28	21

*Decrease.



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Write a Slogan about NORDSTROM VALVES. You may win $250.00. Nineteen cash prizes totaling $500 are offered for the best slogans submitted. The manufacturers are seeking a slogan not to exceed 10 words that will suggest the service or function, features or an outstanding advantage of Nordstrom Valves. The slogan "Won't leak, Won't stick" is now used . . . but you no doubt can think of several that are far better. If you are unfamiliar with Nordstrom Valve service ask your Plant Engineer . . . or write for descriptive catalog. But in any event send in your slogans. You have 19 good chances to win. In the event of a tie for any of the prizes offered, each winner of the respective award will receive the same cash amount.

RULES of Slogan Contest

..Anyone is eligible except employees of Merco Nordstrom Valve Co or affiliated companies

Slogan must not exceed 10 words Any number of slogans may be submitted by same person. Use coupon below or separate sheet of paper Contest closes December 31, 1929

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First Prize . .	$250.00
Second Prize . .	100.00
Third Prize . .	50.00
4 Prizes, each . .	10.00
12 Prizes, each . .	5.00
TOTAL 19 CASH PRIZES	$500.00

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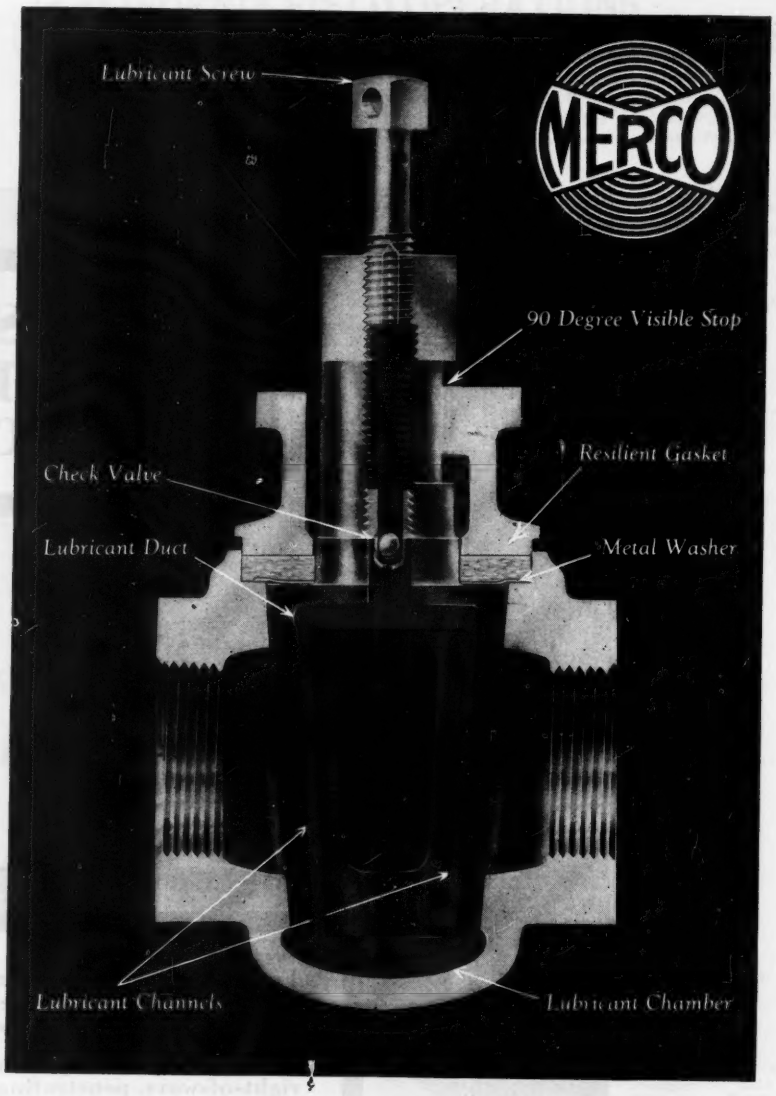

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DOES RAINFALL INCREASE IN THE OIL FIELDS?

(Continued from page 42)

of the weather in Pittsburgh for those years is given below along with a table of oil sold.

Station, Pittsburgh, Allegheny County, Pa.

Year	Annual Precipitation inches	Oil Marketed barrels
1861		2,113,609
1862	29.38	3,056,690
1863	31.62	2,611,309
1864		2,116,109
1865	50.50	2,497,700

Mean Precipitation 36.15 inches for 85 years.

It might be pointed out that the unusually high rainfall of 1865 was due in some degree to the activity of the oil fields north of Pittsburgh, for that amount of rain is not recorded in any other year except 1890 when 50.61 inches fell at this station.

The records show that in 1890 the Pennsylvania and New York districts marketed 28,458,208 barrels of petroleum, but at that time this amount of oil was not greatly in excess of the average for the five-year period which was about 23,000,000 barrels of oil.

Peak and Precipitation

Furthermore, in the following year, 1891, the peak of production for all time for that district was reached amounting to 33,009,236 barrels and in no other year does the production come within 10 per cent of this figure, still the precipitation for Pittsburgh for 1891 was

A sample of Seminole roads during the height of drilling activities in that pool.

38.28 inches just a little above the 36.15-inch average for the 85-year period.

Referring to the only record available for precipitation north of the oil fields of Pennsylvania and New York for the whole period under consideration it is found that at Buffalo, Erie County, New York, the precipitation for 1865 was 35.23 inches and for 1890, 46.55 inches, with the average for 89 years 36.65 inches.

It is interesting to note that the records show that the prevailing wind direction at Franklin, Pa., for a period of 24 years was west during the entire year, and at Warren, Pa., was northwest for all months except July when the direction was southwest and this record covers a period of 24 years.

Pittsburgh, the point of heaviest rainfall, as compared with the northern city of Buffalo, is southwest of Warren and nearly due south of Franklin and it hardly seems reasonable to attribute weather conditions at Pittsburgh to oil field production about 70 miles away.

The only fact that seems established is the history of muddy roads and field conditions in the old Pennsylvania fields during the periods of drilling and heavy production and with normal rainfalls of 41.99 inches per year during the period between 1877 and 1905 it seems reasonable to assume that there has always been an abundance of rain in that territory and the extra hauling of equipment into the fields and oil out of them merely served to cut up the roads more and the influx of workers to the area accentuated the conditions and caused comment regarding it, and it is a well known fact that weather conditions never improve with retelling.

Conditions in Illinois

Next the conditions in Illinois will be considered during that period of peak production there from 1906 to 1915, inclusive. This oil field is in the southeastern part of the State in the drainage area of the Wabash River, and the following data covers conditions at Flora, Clay County, Ill., south of the fields at Casey and west of producing areas around Bridgeport and Lawrence but near enough to the main oil fields to have been influenced by material changes in the weather there.

Flora, Clay County, Ill.

Year	Annual Precip'tation inches	Petroleum Marketed barrels
1906		4,397,050
1907	43.55	24,281,973
1908	33.23	33,686,238
1909	50.55	30,898,339
1910		33,143,362
1911		31,317,033
1912	41.37	28,601,308
1913	43.43	23,893,899
1914		21,919,749
1915		19,041,695

Mean precipitation for this station for 52 years is 41.54 inches.

It is again to be noted that there was an exceptionally rainy year, 1909, during three years of high production, and it is found by search of the data available that the 50-inch rainfall was equalled or exceeded in only two years, 55.00 inches in 1874 and 62.60 inches in 1876 and it is certain that these heavy rainfalls cannot be attributed to any influence of oil or gas production.

At Glenn Pool and Cushing

Moving further west into Oklahoma let us make a study of the weather conditions there during the development of the oil fields at Glenn Pool and Cushing, in 1905-1909 and 1912-1915, respectively.

The history of the Glenn Pool is that it was discovered in the summer of 1905 and the discovery well completed in November, 1905, for 85 barrels having found oil at a depth of 1,481 feet. The next well produced 700 barrels of oil daily and the third well 2,000 barrels and the peak of production for the field was reached in July of 1907 with a daily production of about 117,000 barrels.

It was then the practice to allow the wells to produce to their full capacity and along with the oil there were great quantities of gas brought to the surface and dissipated either by allowing it to flow into the atmosphere from the tanks or burning it in torches connected to the pipe lines from the well head.

It is stated by men who were in the Glenn Pool during the height of the excitement that it was as light as day there at night due to the great number and size of the open flame torches.

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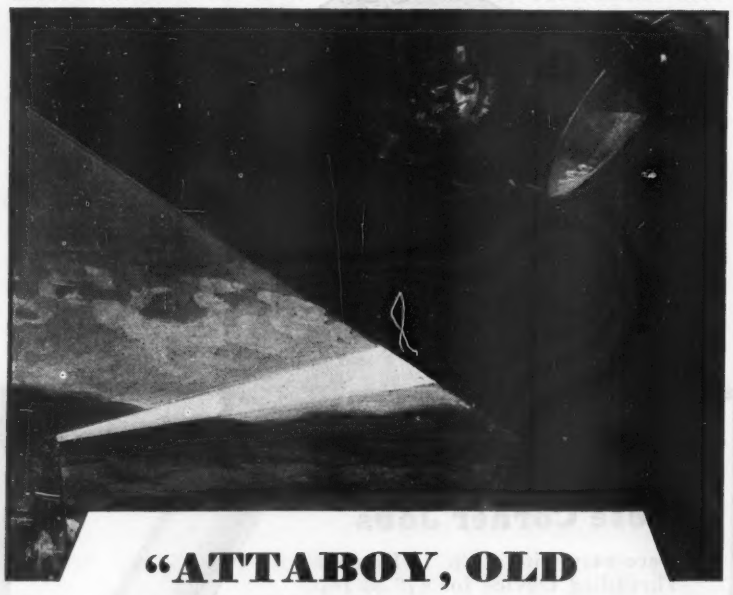

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Blatchley dealing with "Waste of Oil and Gas in the Mid-Continent Fields" it is stated that an estimate of more than 50,000,000 feet of gas was consumed outside of field operations, and that billions, perhaps as high as 50,000,000,000 feet of gas was wasted. Many of the wells with initial volumes of 10,000,000 to 30,000,000 feet flowed wide open for periods of one to eight weeks. The amount of gas used was negligible in proportion to the amount wasted.

Comment has been made that 50,000,000 cubic feet of gas is less than two-fifths of a cubic mile and therefore a negligible quantity as compared with the atmosphere as a whole.

While this is a true statement, it can also be shown that this amount of gas at a temperature of 77 degrees Fahrenheit can carry approximately 35.9 tons of water, and if this quantity of water is reduced to rainfall it can cover .64 of a square mile one-half inch deep. This in itself may not mean much but if it is added moisture to an atmosphere that is already near saturation it might be a determining factor in causing precipitation.

It is further reported that some wells in the Glenn Pool having original flows of from 30,000,000 to 70,000,000 feet daily were exhausted in from three to four months.

Gas fires were frequent and one well estimated as making about 20,000,000 feet of gas per day caught fire and burned for several weeks before the flame was suffocated with steam.

Precipitation Record

With this background of field conditions in Glenn Pool during the flush production period, the precipitation record will be considered for the period between 1905 and 1910, inclusive.

There are no meteorological records available for the Glenn Pool district itself but stations at Tulsa, Okmulgee and Ft. Gibson located northeast, south and southeast respectively, are used as basis for comparison.

Prevailing wind directions, annual, for Tulsa for an 18-year period are south; for Okmulgee for an 18-year period are south, and for Muskogee, near Ft. Gibson, for an 8-year period they are reported south also.

Climatological data for

Year	Production barrels	Tulsa, inches	Okmulgee, inches	Ft Gibson inches
1905		47.37	49.71	
1906	1,000,000	37.59	32.27	42.08
1907	19,926,995	35.21	28.20	36.91
1908	20,494,313	55.23	53.91	59.31
1909	18,946,740	33.52	25.70	30.21
1910	19,236,914	24.07	23.42	54.43

Mean Precipitation 35.90 inches (33 years), Tulsa; 35.19 inches (17 years), Okmulgee; 37.24 inches (45 years), Ft. Gibson.

This record is rather interesting in that it shows that a very much greater rainfall than usual for this district occurred in 1908 and reference to the monthly rain tables shows that these rains were particularly heavy in the spring of the year, and it is possible that while the production peak for initial flow was reached in 1908 the maximum amount of gas produced was also during this year.

Wet Gas Considered

The Cushing Field is really made up of several pools with the discovery well brought in during March 1912, and the peak of production for the field reached in May of 1915 with a total of 305,000 bbls. daily.

This is another pool that was developed very rapidly and immense quantities of "wet" gas (gas mixed with oil vapors) were found at each well in the Cushing Field. The amount varied from 4,000,000 to 20,000,000 cubic feet a day. At about 15 wells in the area an average of from 4,000,000 to 5,000,000 cubic feet of gas blew into the atmosphere for several months.

The usual method of handling the production was to flow the oil with its accompanying gas from the well in one or two 6-inch pipe lines starting at the well head and terminating in "flow tanks," and the gas was allowed to make its escape there to the atmosphere, and it is stated that the roar of this escaping gas could be heard for a half mile away from the tank.

It is conservatively estimated by men in the field at the time of its most rapid development that 50,000,000 feet of gas was wasted in this way daily, and for the whole field it is estimated that about a billion and a half feet were wasted in 1912 alone.

It was found that the rock pressure of the gas inside the casing was 725 pounds and outside the casing 675 pounds and the volume of that particular well was 32,000.000 feet daily.

With pure air at 32 degrees Fahrenheit and a barometric pressure of 29.92 inches of mercury 1 cubic foot will weigh 0.080728 pounds and has a specific gravity of 1. On this basis of calculation gas with a specific gravity of 1.24 would weigh about 100 pounds per 1,000 cubic feet and if 32,000,000 feet were discharged per day it would represent a weight of approximately 1,600 tons discharged at a pressure of 725 pounds per square inch. This amount of material is infinitesimal compared with the weight of the air in the atmosphere, but taken by itself it does represent a considerable amount of matter and energy wasted in dissipating it into the atmosphere.

Dry Gas

If the gas is a dry gas made up largely of methane, the specific gravity will be probably less than half that given above, so the weight of the mass would be correspondingly reduced, but if the total volume of gas discharged in the field is considered the total weight of the elements distributed through the atmosphere

A bad piece of road in Oklahoma during a busy drilling period.

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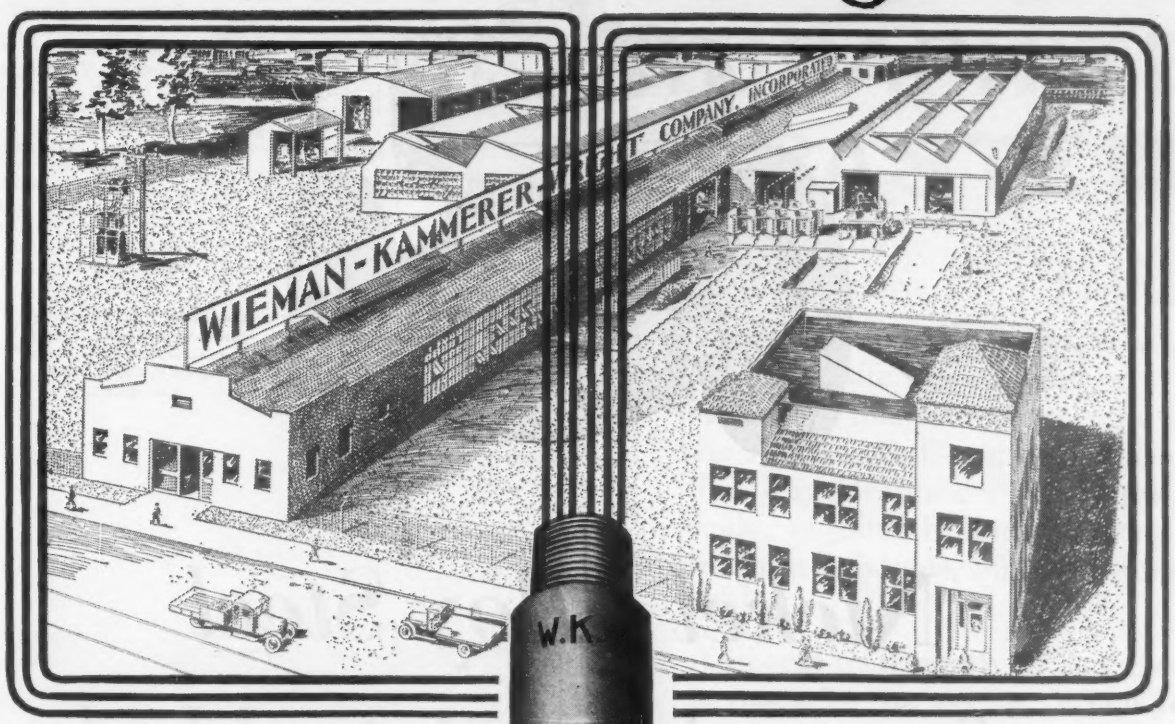

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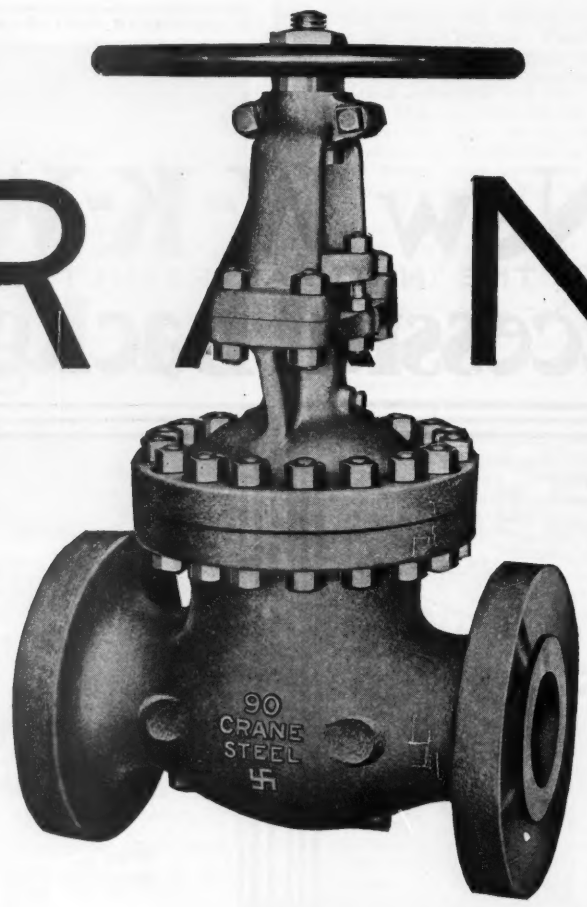

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in the vicinity of the oil field would be about equal to the weight given above.

Climatological Data

Year	Production (bbls.)	Cleveland (in.)	Okmulgee (in.)	Chandler (in.)	State (in.)
1912..	559,050	31.02	29.18	31.65	28.60
1913..	8,181,660	34.81	31.99	29.88	33.07
1914..	21,994,985	25.47	24.53	29.19	25.72
1915..	73,884,749	55.33	51.66	42.57	45.41
1916..	40,656,260	34.92	41.53	34.51	29.47
Mean precipitation 19 years		38.62	35.19	33.13	32.52

Here again the year of greatest rainfall and production were the same and when it is recalled that gas-oil ratios were very high in those days of flush production there is no doubt that a tremendous amount of foreign matter was thrown into the atmosphere in this field.

The other years of precipitation in excess of 50 inches at Cleveland were 58.97 inches in 1902, 51.32 inches in 1903 and 61.04 inches in 1908, while at Okmulgee the annual rainfall of 53.91 inches occurred in 1908, (during the year of the Glenn Pool peak) and Chandler had a year of heavy rain in 1907 when 60.67 inches fell. Excepting for the Glenn Pool there were no oil fields producing in these areas in the years cited above.

Stories of teams lost in the mud and impassable roads in the Cushing Field and around it are still being told by those who participated in the excitement of that period, and it is a very definitely known fact that vast quantities of machinery and supplies were hauled into the fields which were about 12 miles from

Some dusty roads in Crane County where rain had not fallen in some time.

Cushing at the start of the boom and practically all of the hauling was done by teams.

But the average precipitation for the state shows more than the average rainfall for a period of 44 years, and it is also to be remembered that the Healdton Field was on flush production in 1915 adding materially to the amount of gas being turned into the atmosphere.

Burkburnett and Ranger

The Burkburnett and Ranger oil booms of 1918-20 have gone down in history as having been developed during a period of excessive rains that turned the roads and the fields into mires of mud through which all traffic moved very slowly, if it could move at all.

The stories told seem hard to believe, but perhaps they hardly equal the one told of a Tulsa rainstorm as reported by a farmer living in the direct path of the storm, who stated that it was so severe that a barrel lying in the barnyard with both ends out but with the bunghole turned upward and not plugged was burst because the rain entered the bunghole more rapidly than it could flow out through the open ends of the barrel.

The rains at Ranger came after what was generally considered by the stockmen in that vicinity as three years of drought and the three years just preceeding 1919 are therefore given in the table below and when it is considered that Eastland County's average rainfall for 12 years was 25.92 inches it will be noted that neither the period of drought nor flood are very apparent from the actual meteorological records.

Year	Production barrels	Precipitation Eastland, Tex. inches
1916	.....	20.79
1917	93,053	14.41
1918	3,107,120	22.91
1919	22,379,665	28.61
1920	10,141,300	....
1921	5,887,420	17.45
Mean precipitation		25.92 (12 yrs.)

Likewise a check on the Wichita Falls area where the Burkburnett excitement of 1919-20 took place shows a different condition there to what happened in Ranger. In considering the increased rainfall in 1919 during the height of the drilling campaign it might be well to remember also that Burkburnett Field is along the banks of the Red River, just as the Cushing Field is near the Cimmaron River and Glenn Pool south and west of the Arkansas River.

Year	Production barrels	Precipitation Wichita Falls, Tex. inches
1916	.....	21.85
1917	.....	17.87
1918	12,159,108	29.55
1919	30,279,108	47.15
1920	32,895,485	....
1921	24,184,955	....
Mean precipitation		28.83 (27 yrs.)

It is unfortunate that complete data for the years 1920 and 1921 are not available for it would be interesting to know how much rain fell the years following the peak of production.

Wichita Falls Weather

At Henrietta, Clay County, Tex., about 20 miles to the east of Wichita Falls the records show that the rainfall in 1919 was only 26.36 inches as compared with a mean of 27.42 inches and 1920 rainfall was 38.62 inches a considerable increase and due largely to heavy rains in August and October of that year. The annual prevailing direction of wind for Henrietta is south, and the monthly record shows the same condition except for the month of December when it was north.

There have been several oil fields of considerable importance discovered near Corsicana, Navarro County, Tex., along the Balcones fault and there is also available climatological data covering that area for the period 1872 to date so that very good average conditions can be secured.

Neglecting the first Corsicana and Powell drilling campaigns, that is prior to 1922 because the production obtained in either field did not exceed a million barrels of oil per year, and starting with the year 1923, the production and weath-

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er conditions are reflected in the accompanying table.

Year	Production barrels	Precipitation Corsicana, Tex. inches
1922	32,361,000	41.42
1924	33,501,000	33.35
1925	17,528,000	24.98
1926	10,562,000	50.93
1927	6,450,000	37.69
Mean precipitation		36.34 (41 yrs.)

The 50-inch annual precipitation peak was passed twice in that district during the period of record keeping, once in 1876 with 53.89 inches and also in 1888 with 52.43 inches.

Here again the field is located close to the Trinity River but this would hardly account for the rainfall increasing so greatly in 1926 when the production was falling off so rapidly.

Blowing Less Gas

There is one influence that must be considered in the modern oil field as against the old practices followed in fields brought in during the early days of the industry, and that is the tendency to conserve the gas that is found with the oil and this has led to a decided decrease in the number of open flow wells.

In Texas the Railway Commission has charge of details concerning conservation of oil and gas and it is very strict in its ruling in all fields.

On the other hand residue gas from gasoline plants is still being burned in great quantities because there is no market near enough to the fields to consume the amount produced. This burning is done in open torches and considerable heat must be generated in the immediate vicinity of the torch, but from the standpoint of influencing weather conditions and rainfall even in a very limited area it is hard to assume this could have any bearing on this problem.

The flush production of the Hutchinson County fields of the Panhandle of Texas was during 1926 and 1927 when 24,000,000 and 33,000,000 barrels of oil was produced each respective year.

This country is noted for its arid condition and the weather station at Amarillo, in Potter County, west of the field has been maintained since 1892 and shows an average precipitation of 20.83 inches annually up to and including 1920.

The precipitation in Amarillo for 1926 was 26.25 inches—5.42 inches above mean and in 1927 it was 15.42 inches or 5.41 inches below mean so the two years just balanced one another, yet here is a case where large fields were opened and produced rapidly.

However, there again the Railway Commission did restrict gas waste but on the other hand a great quantity of gas was and is still being burned in carbon black plants and the free carbon discharged into the atmosphere from that source should have some effect upon the rainfall if it is true that carbon from chimneys form the nucleus for the formation of the raindrop as quoted in one of the opening paragraphs.

In Bend of River

This field is also located in the bend of the Canadian River but during a great part of the year this stream does not carry much visible water and therefore it might be eliminated as a possible source of moisture, if the river theory has any bearing whatsoever on rain around oil fields during periods of intensive production.

Out in West Texas along the Pecos River they have been busy developing some large fields, but the gas accompanying the oil in most of those fields is not excessive, and while a considerable quantity is being burned in open torches in some of the fields the comparative area that would be influenced by this heating effect compared with the areas explored for oil would be small.

This region offers many interesting considerations in connection with its weather and for the most part consists of a sandy soil and grass land and if water was available in quantity could be made productive.

Effect of Cannonade

The national government sanctioned the organization of an expedition to try out certain theories advanced by Edward Powers in a book published in 1871 entitled "War and the Weather" in which he contended the concussion of cannonading caused rainfall in very dry regions.

His theory was based upon the contention that there was a considerable amount of moisture in the upper stratas of air at all times, and that the flow of this air was from the west at these higher altitudes and if bombs or balloons could be exploded at these great heights the concussion would cause this moisture to precipitate.

The Midland ranch in northwestern Texas was selected for the trial and the expedition was under the direction of General R. G. Dyrenforth and the tests conducted during the period of August 9 to 25, 1891, and the explosions varied as to their frequency and the height at which they occurred.

George E. Curtis, who has meteorologist for the expedition concluded his report with the statement, "These experiments have not afforded any scientific standing to the theory that rain-storm can be produced by concussions."

Prof. Alexander McFarlane, of the University of Texas, in a letter to the San Antonio Daily Express of December 4, 1891, said, "The trial of Friday, August 25, was a crucial test, and resulted not only in demonstrating what every person who has any sound knowledge of physics knows, that it is impossible to produce rain by making a great noise, but also that even the explosion of a twelve-foot balloon inside a black rain cloud does not bring down a shower."

This "crucial test," however, was followed next day by a precipitation that was characterized by different persons as anything from a mere sprinkle to a heavy rainfall, two or three miles to the northwest of the place where the experiment was made, but in a direction in which the wind would have carried the clouds.

It is not certain that the rain was due to the explosions, and it was unfortunate that the experiments resulted in this negative fashion and were not conclusive.

These experiments are interesting in connection with this study of the possible effect of oil fields on rainfall in that they were made in the immediate vicinity of some of the present day large oil fields of the Permian Basin area and during the summer of 1928 when it seemed to be the general opinion of stockmen in that region that there had been more rain than usual, and they came to this conclusion by the very evident increase in the growth of grass on the ranges.

Record of Last Year

To check up on this opinion preliminary reports of the monthly and annual precipitation for 1928 were secured from the United States Weather Bureau for this region and are tabulated below, as they were received:

MONTHLY AND ANNUAL PRECIPITATION, 1928

Station	Jan.	Feb.	Mch.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual
NEW MEXICO													
Carlsbad	0.00	0.65	T	0.85	2.12	T	2.79	5.52	0.86	1.06	0.36	0.03	14.34
TEXAS													
Grandfalls	0.00	0.00	0.00	0.53	4.35	1.55	2.05	11.65	2.70	1.00	...	0.00	....
Buena Vista	0.00	0.00	T	0.20	2.37	0.63	1.32	3.59	2.99	0.71	0.18	T	11.99
Ft. Stockton	0.05	0.35	0.05	0.40	2.50	1.30	3.45	5.32	3.31	0.90	0.97	0.30	18.80
Midland	0.00	0.24	0.34	2.82	4.87	2.75	1.35	3.50	...	2.38	0.42	0.45	....
Garden City	0.36	0.55	0.81	0.21	4.89	1.11	4.79	5.80	0.87	1.35	0.98	0.18	21.90

Note: Precipitation data for 1928 missing for Grandfalls and Midland in November and September, respectively.

These stations were selected because they are for the most part in the drainage basin of the Pecos River and close to the new oil fields of that region, and comparing them with other reports for the same areas some interesting facts are developed.

There are records showing the precipitation in the Carlsbad, New Mexico, area for the past 24 years has averaged 14.07 inches annually, while the 1928 rainfall

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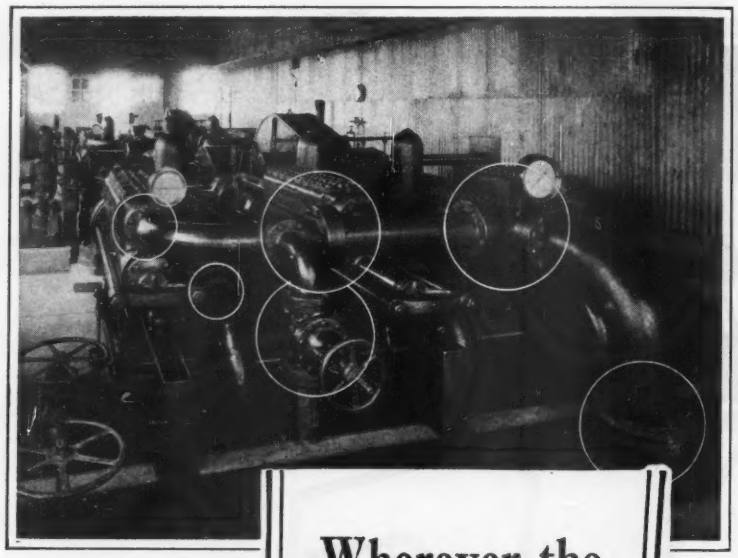

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was 14.25 inches, which is so close that its increase is negligible.

Grand Falls unfortunately does not have a complete report for 1928 but it will be noted that they did have some very heavy rains there in August last year.

This is not unusual for that region as the following article will show:

"Some of the heaviest rains which fall in short intervals of time in America occur in southwestern Texas, notwithstanding the general aridity of that region. This happens when certain contrasts of atmospheric pressure exist which produce conflicting currents and underrunning of masses of warm air by cold air, and the elevation of warm air to such heights as to cause rapid condensation and heavy precipitation. Any process whereby large masses of relatively warm and moist air are elevated and cooled thereby to the point of condensation will produce heavy rainfall, and that is what occurs occasionally in Texas."

At Taylor, Tex., in Williamson County, they had a rainfall of 23.11 inches within a period of 24 hours on Sept. 9-10, 1921, as recorded officially by the Weather Bureau. This is the greatest rainfall ever recorded with standard rain guage anywhere in Continental United States. The town of Taylor is east of the Permian Basin area but the same general statement regarding heavy rains is true of that region also.

Pecos County

Considering Buena Vista located on the west side of the Pecos River in Pecos County and northeast of Ft. Stockton, it is noted that the mean rainfall for the 15-year period was 12.50 inches just a little more than that recorded for 1928.

Fort Stockton in the same area shows a 45-year average rainfall of 14.88 inches against 18.80 inches for 1928. Both of these stations are west of the oil fields and the prevailing wind for the area is south and southeast.

Garden City is considerably east of the Crane County oil field with a prevailing southeast wind and shows a mean precipitation for 11 years of 15.25 inches with the 1928 rainfall 21.90 inches, a considerable increase, but hard to reconcile with any condition set up by oil fields 75 miles away to the west.

This town is located in a bend in the Colorado River and directly north of it about 30 miles there is located a new group of oil fields at Big Spring in Howard County, which produced 4,692,000 barrels of oil last year, but for the most part the wells did not have any great amount of gas accompanying the oil.

A study of a number of other fields in Oklahoma, Arkansas, Louisiana, and along the Gulf Coast reveals the same inconsistency of relative rainfall to production, and when it is considered that the tendency is now to conserve all gas possible and hold the gas-oil ratio as low as possible it can hardly be expected that future oil fields will be greatly influenced by rainfall due to any conditions of producing oil or gas.

Seminole Field

The Seminole Field proper was opened in July, 1926, and had a production of 230,000 bbls. average per day per month during January and February, 1927, with plenty of bad weather and muddy roads.

A check of the mean precipitation at Shawnee about 20 miles away to the northwest is 33.54 inches for a 19-year period and was only 31.78 inches for the year 1927, while the month of January, 1927, showed a decrease of 0.29 inch and February an increase of 0.44 inch neither being any great departure from the average.

Weather Chief's Opinion

Commenting upon a hypothetical question based upon the possibilities of hydrocarbon gases released from wells in great quantities during periods of flush production causing additional rainfall in the vicinity of those oil fields, Dr. C. F. Marvin, chief of the United States Weather Bureau, in a personal communication to the writer, states:

"I may say that you will probably seem to find in rainfall records evidence in support of your idea that peaks of well productivity may occur coincident with peaks of precipitation. I should like to say that you go back in the record 50 or 100 years and see if you do not find practically identical peaks and features in precipitation when we know there was no oil well activity at all.

"Obviously what seems to us to be immense amounts of foreign matter may be injected into the atmosphere incident to oil well operations. Possibly some of this may facilitate condensation of atmospheric moisture on hydroscopic nuclei but whether or not that leads to the precipitation of a greater quantity of water than would otherwise occur without the presence of foreign matter from oil wells is a rather difficult question to answer and the burden of proof rests on those claiming the precipitation is due to the material from the wells rather than otherwise.

"Precipitation might occur and tend to wash the atmosphere clear of the products from the wells. Moreover, as we know, volcanic eruptions throughout all past history have injected vast quantities of foreign materials, gases, etc., into the atmosphere and some studies indicate dispersion and scattering of incoming radiation by fine particles from such sources giving us sunset's glows and possibly lowering the temperature at the earth's surface from loss of direct radiation. An argument like the one you use for oil wells could be used to indicate that precipitation is produced by volcanic eruptions apart from the fact that vast quantities of water vapor also are products of such eruptions, giving us heavy precipitation in the immediate vicinity of the volcano.

"* * * In principle I believe there are always present in the atmosphere an excess of nuclei on which condensation can occur when other conditions favor and the amount of precipitation from the atmosphere is not necessarily dependent on the availability of nuclei if these are always in excess of sufficient."

This contribution of Dr. Marvin's is without doubt a very concise statement of facts and does place the burden of proof upon those who assume that weather conditions around the oil fields during flush production are unusual and caused by some factors that are the results of this high rate of discharge of gas into the atmosphere, for it hardly seems that any other operation in bringing in large wells could have any possible effect upon weather conditions.

Liberated Gas

The records are by no means complete to permit of any judgment being passed upon the influence of relative large volumes of gas being liberated over comparatively small areas at the same time, for if these gases do carry water vapors, as it is known they do when producing from some sands, it would still be necessary to establish the relation between this amount of water vapor and the normal humidity of the air in the vicinity of the field, to determine whether the added moisture from the wells could have any influence on precipitation.

There seems to be enough evidence submitted to establish the fact that there has been exceedingly high rainfall in some of the older fields during periods of active production, and whether this is merely coincident or based upon some condition set up by this production work, cannot be determined by the data at hand, but these same areas fail to show precipitations in the amount registered during peak production except in very rare intervals, but it is possible to show that the heavy rainfall has occurred frequently during the excitement period of bringing in the greatest number of large wells in many oil fields.

Mud and Pyschology

It is granted that mud incident to oil field flush production is much more noticeable to those who have to work in it due to the inconvenience and discomfort it causes and will leave a memory of many unpleasant hours spent toiling in it, and in one or two cases it is shown that the precipitation necessary to make

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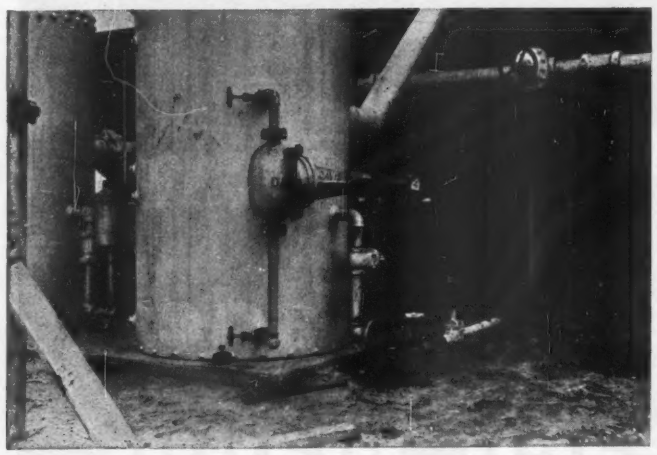

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this excessive mud is not much, if any, above the mean for that region for a long period of time.

Without doubt it therefore seems that in the older fields the records show that there were years of very heavy precipitation coincident with the years of great production, and it is known that the gas waste during those times was excessive, but in some of the later flush fields where there has been a great deal of mud, it may be chargeable largely to the fact that extremely large amounts of heavy machinery has been moved into the fields in very short time interval and this heavy motor truck traffic has torn up the roads to such an extent that only normal rains were necessary to create conditions that resembled those of the roads in the older fields, where there had actually been extra heavy precipitation.

It does also seem that the effect of this muddy condition upon the worker and visitor in the oil fields alike is largely psychological because almost without exception everyone is working under high tension and small delays from any cause create much more comment than they would do under more normal conditions, and this fact is largely due to the prominence given to oil field conditions during flush production periods.

WILDCAT OPERATIONS IN OKLAHOMA

(Descriptions are East and North unless otherwise marked)

(Continued from Page 50)

Whitney et al's No. 1 Moore, SE SW Sec. 17-5-9 .....Abandoned; lost hole 8,936 ft.

JACKSON COUNTY

Altus Oil Co.'s No. 1 Northington, NE cor. NE Sec. 4-1-20w .....Shut down 2,020 ft.

KINGFISHER COUNTY

Superior Oil Co.'s No. 1 Story, SE cor. Sec. 25-19-5w ....Fishing 6,285 ft.
Galt Brown's No. 1 Wolf, NW SE Sec. 6-16-7w .....Shut down 6,015 ft.

KIOWA COUNTY

Hyde et al's No. 1 Jones, SE cor. Sec. 23-3-18w-50 .....Shut down 490 ft.
Merrick Oil Co.'s No. 1 Kelly, NW cor. SE Sec. 20-7-17w ..Shut down 1,035 ft.

LEFLORE COUNTY

Red Bank Oil Co.'s No. 1 fee, SE SW NW Sec. 23-9-24 ..5,000,000 ft. gas showing 5,005 ft.; drlg. 5,006 ft.

LATTIMER COUNTY

Limestone O. & G. Co.'s No. 1 Shaw, NW cor. NE NW Sec. 23-5-18e .....Shut down 1,450 ft.
Limestone Oil & Gas Co.'s No. 1 McMurray, SW cor. SW Sec. 15-5-18 .....Total depth 4,010 ft.; cleaning out.

LINCOLN COUNTY

Morgan & Flynn's No. 1 Johnson, SW NE Sec. 1-16-5 ....Drlg. 1,427 ft.
Phillips Pet. Co.'s No. 1 Stephens, SE cor. NW Sec. 29-12-3 .....Drlg. 4,695 ft.

LOGAN COUNTY

Haley & Smith's No. 1 Guier, SE cor. SW Sec. 33-18-3w ..Shut down 3,970 ft.

McINTOSH COUNTY

Jennings Bros.' No. 1 Crabtree, NW SW NE Sec. 31-10-14 .....Spudding.
Spring Valley Oil Co.'s No. 1 Carr, SE cor. NE NW Sec. 16-10-13e .....Shut down 2,508 ft.
Patterson and others' No. 1 Smith, SW cor. NW SE Sec. 32-9-16 .....Shot 240 qts. 5,446-5,559 ft.; shot went off up hole; fishing.

MAJOR COUNTY

Earl and others' No. 1 Turner, C NE NE Sec. 23-20-14w..Rig.

MUSKOGEE COUNTY

Sioux Oil Co.'s No. 1 Unknown, NW SE Sec. 21-11-19 ....Shut down 1,011 ft.
Cooper-Badget's No. 1 Young, NW NE NE Sec. 7-12-20e..Shut down 50 ft.

NOBLE COUNTY

Peerless et al's No. 1 Wentz, NW SW Sec. 22-22-1 ....Drlg. 1,665 ft.
Gypsy Oil Co.'s No. 1 Bailey, C NE NE Sec. 24-22-1e ..Drlg. 4,930 ft.
Magnolia Petroleum's No. 1 King, C SE SW Sec. 26-26-1w.Drlg. 5,115 ft.

OSAGE COUNTY

Peters and Producers & Refiners' No. 1, SE cor. Sec. 19-26-7 .....Drlg. 3,120 ft.
Oliphant et al's No. 1, NE cor. Sec. 13-24-6 .....Drlg. 2,724-26 ft.; hole full water

OKFUSKEE COUNTY

Henry Oil Co.'s No. 1 Harjo, Sec. 36-12-9 .....Drlg. 2,025 ft.
Shepard et al's No. 1 Neveas, SE NW SW Sec. 3-12-10 ..Drlg. 3,410 ft.
Superior and others' No. 1 Carolina, SE cor. Sec. 6-11-7e .....Show water 4,840-42 ft.

OKLAHOMA COUNTY

Ryan & Martin's No. 1 Lawton, NE NW Sec. 3-11-2w ..Rig.
Tom Slick Oil Co.'s No. 1 Martin, C NW NW Sec. 13-13-1w .....Rigging up standard tools 5,640 ft.
Hall & Briscoe's No. 1 Holmes, NE cor. SW SE Sec. 10-11-3w .....Shut down 4,750 ft.

PITTSBURG COUNTY

Galbreath's No. 1 Snyder, C W half SW Sec. 28-4-13 ....Shut down 160 ft.
Empire O. & R. Co.'s No. 1 Williams, C NE SE Sec. 33-7-16e .....Drlg. 2,601 ft.
Kerr & Koy's No. 1 Hall, C NW NW Sec. 32-4-12 .....Drlg. 2,645 ft.

PONTOTOC COUNTY

Indian Territory Illuminating Oil Co.'s No. 1 McFarland, NW cor. Sec. 4-5-5 .....Rigging up standard tools 2,532 ft.
Independent and Shaffer's No. 1 Moses, NE SE SW Sec. 10-5-4 .....Underreaming 8-in. csg. 2,985 ft.

POTTAWATOMIE COUNTY

Payne Drlg. Co.'s No. 1 Bullock, SE NE Sec. 27-6-3 .....Location.
Lippa Drlg. Co.'s No. 1 Pittman, SW NW Sec. 3-8-4 ....Drlg. 3,100 ft.
Twin State's No. 1 Ray, NW SW Sec. 3-8-4 .....Rig.
Prairie O. & G. Co.'s No. 1 Bodkin, SW cor. Sec. 26-8-4 ..Drlg. 2,320 ft.
Empire O. & R. Co.'s No. 1 McKown, SW NW Sec. 25-8-4 .....Drlg. 4,102 ft.
Keister & Manning's No. 1 Tibbs, NE SW Sec. 9-8-4 ....Drlg. 4,240 ft.
Amerada's No. 1 Vineyard, NW NE NE Sec. 15-7-3 ....Drlg. 5,011 ft.
Gypsy Oil Co.'s No. 1 Randolph, NW NE Sec. 23-6-4 ....Drlg. 3,510 ft.
Cal-Cul Oil Co.'s No. 1 McKnight, NW cor. NE NW Sec. 9-8-3 .....Drlg. 5,250 ft.

ROGER MILLS COUNTY

Bucy & Stone's No. 1 Williams, C SW Sec. 23-12-24w ..Rig.
L. C. Hivick's No. 1 Davis, C NW NE Sec. 4-11-26w ....Shut down 1,800 ft.

SEMINOLE COUNTY

Sunray Oil Co.'s No. 1 Sunday, NW SE Sec. 25-5-5 ....Location.
Prairie & Slick's No. 1 Bettsey, NW SW Sec. 36-6-6 ....Drlg. 3,815 ft.
Harris' No. 1 Harjoche, SE NE SE Sec. 8-6-6 .....Drlg. 3,896 ft.
Prairie's No. 1 Mingo, NW NE Sec. 25-6-6 .....Underreaming 8-in. csg. 2,900 ft.

SEQUOYAH COUNTY

Hunt and others' No. 1 Unknown, SE cor. NW SW Sec. 12-12-22 .....Shut down 1,260 ft.
Buffington and others' No. 1 Melcher, C SW NW Sec. 31-12-24 .....Shut down 3,000 ft.

WOODS COUNTY

Peerless O. & G. et al's No. 1 Cromwell, SW SE Sec. 14-28-16w .....Shut down 1,500 ft.
S. K. Miller's No. 1 Copenhavers, NW cor. NW Sec. 18-24-13w .....Rigged up and shut down.
Gypsy-Prairie and others' No. 1 Thompson, SE cor. SW Sec. 10-25-15w .....Fishing 5,935 ft.
Sinclair Oil & Gas Co.'s No. 1 Showalter, C SW SW Sec. 33-27-16w .....Fishing 5,320 ft.

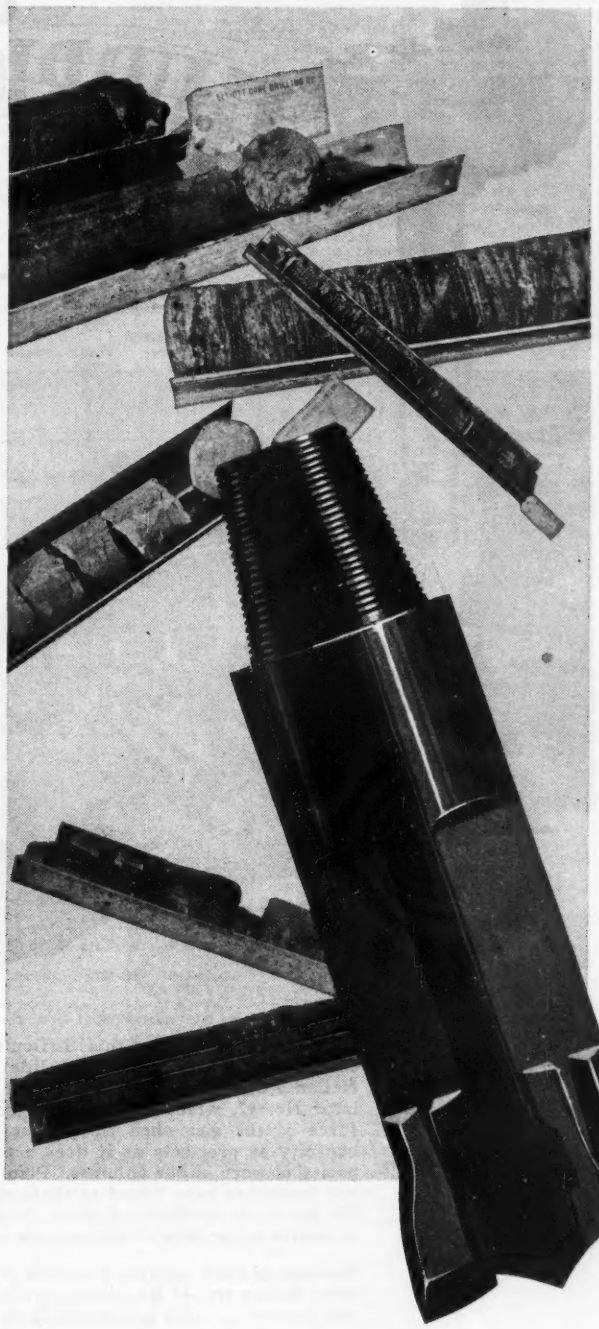
WOODWARD COUNTY

Farrond et al's No. 1 Unknown, SE cor. SW SE Sec. 2-23-17w .....Shut down 1,387 ft.
Prairie Oil & Gas and others' No. 1 Wilber, NE cor. NW Sec. 23-23-17w .....Drlg. 5,580 ft.
Billy's Oil Co.'s No. 1 Watt, C SE Sec. 9-23-20w .....Fishing 4,630 ft.
Burgoyne Brothers' No. 1 Merkins, SW cor. SE NE Sec. 15-21-19w .....Shut down 1,910 ft.

SOUTHERN OKLAHOMA

BRYAN COUNTY

Marshall's No. 2 fee, C SW SE NW Sec. 26-5s-7 .....6-in. csg. 265 ft.



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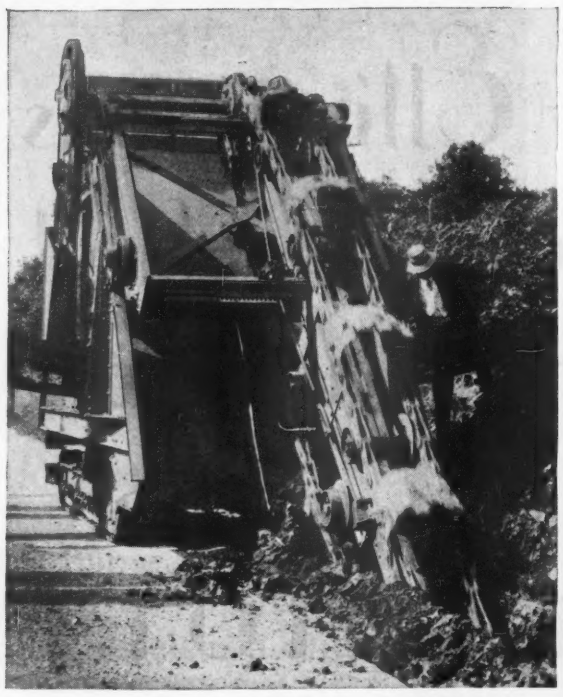

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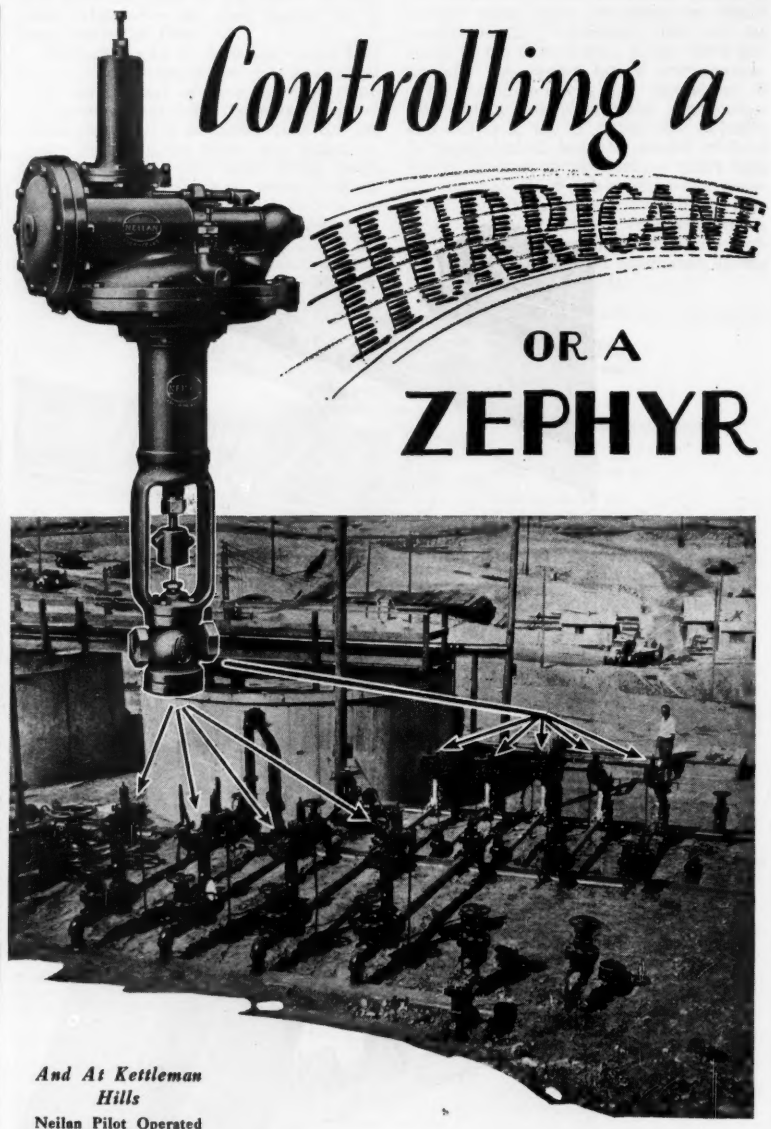

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Stanley-Munday's No. 1 Club Lake, NE NW NW Sec. 31-6s-10e ..... Abandoned 810 ft.
Yale Oil Syndicate's No. 1 Craige, C NW NE Sec. 36-9s-9e ..... Shut down 1,816 ft.

CARTER COUNTY

Avon-Dickey's No. 1 Anderson, NE cor. SE NE SE Sec. 32-4s-2 ..... Shut down 550 ft.

CHOCTAW COUNTY

Choctaw Petroleum Co.'s No. 1 Wilson, SW cor. SW Sec. 15-6-19e ..... Shut down 1,346 ft.

COTTON COUNTY

Wirt Franklin's No. 1 Bandy, NW cor. Sec. 4-4s-10w .... Drlg. 1,147 ft.

JEFFERSON COUNTY

Danciger et al's No. 1 Dilley, SE NW Sec. 11-5s-7w .... Rigging up to drill deeper; shut down.
Gypsy Oil Co.'s No. 1 Smith, C SW SE SE Sec. 2-7s-7w .. Drlg. 3,387 ft.

JOHNSTON COUNTY

Smith & Knisely's No. 1 Lane, E half Sec. 29-1s-7 ..... Shut down 2,254 ft.

McCURTAIN COUNTY

Utopia Pet. Co.'s No. 1 Unknown, SE NW Sec. 14-9s-25 .. Location.
Milton et al's No. 1 Vase, SW NW Sec. 26-6s-21 ..... Shut down 1,490 ft.

MARSHALL COUNTY

Westheimer & Daube's No. 1 Monsenberg, SE SW Sec. 26-7s-5 ..... T. D. 1,146 ft.; P. B. 373 ft 2,000,000 ft. gas; completed.

STEPHENS COUNTY

Smythe et al's No. 1 Johnson, NE cor. Sec. 30-2-8w .... Location.
Pandem Oil Co.'s No. 1 Harber, C SE SE Sec. 34-2-9w .... Drlg. 1,783 ft.
Pace et al's No. 1 Voss, C SE NW SW Sec. 23-2s-7w .... Drlg. 2,005 ft.
Pace et al's No. 1 Horton, C SE SW SE Sec. 26-2s-7w .... Drlg. 2,145 ft.
Pace et al's No. 1 Butler, C NW NW SW Sec. 35-2s-7w .. Drlg. 2,154 ft.
Porter & Monahan's No. 1 Robberson, SE NW Sec. 23-3s-4w ..... Shut down 3,040 ft.

TILLMAN COUNTY

Nance et al's No. 1 Massie, NE NW Sec. 34-1S-6w ..... Location.
Landfair and others' No. 1 Smith, SE SW SE Sec. 6-2s-16w ..... Shut down 2,535 ft.

OKLAHOMA PANHANDLE

Skaer's No. 1 Hitch, NW cor. Sec. 25-1-15e ..... Shut down 250 ft.

WILDCAT OPERATIONS IN KANSAS

(Descriptions are East unless otherwise marked)

(Continued from Page 52)

HARPER COUNTY

Boeler et al's No. 1 Bear, C NE Sec. 21-31-6w ..... Shut down.
Tom Slick Oil Co.'s No. 1 Miller, SE cor. Sec. 13-34-8w ..... 6-in. csg. 5,146 ft.
Tom Slick Oil Co.'s No. 1 Thompson, NW cor. Sec. 19-32-6w ..... Viola 4,936-50 ft.; recementing; total depth 4,974 ft.
Independent & Reserve Oil Co.'s No. 1 Moulds, C NE Sec. 7-24-1w ..... Drlg. 2,725 ft.

HARVEY COUNTY

Liggett et al's No. 1 Regler, C SE NW SE Sec. 2-23-3w .. Drlg. 2,370 ft.
E. W. Marland, Inc.'s No. 1 Chambers, C NE SE NE Sec. 8-24-2 ..... Spudding.
Deering-Marshall's No. 1 Dick, Sec. 4-25-2w ..... Drlg. 3,945 ft.
McCulloch et al's No. 1 Prouty, NW cor. SW Sec. 3-23-1w ..... Fishing 2,480 ft.
Mrs. Gay et al's No. 1 Grove, C NW NE NW Sec. 29-23-1w ..... Shut down 3,295 ft.
Jolly & Ogg's No. 1 Randall, NE cor. NE Sec. 11-24-1w ... Shut down 3,444 ft.
Jolly & Ogg's No. 1 Hupp, SE cor. NE Sec. 22-23-1w .... Shut down 3,220 ft.
Walton Oil Co.'s No. 1 Neiman, C SE SW Sec. 13-14-2 .... Drlg. 2,180 ft.

HODGEMAN COUNTY

Phillips Pet.'s No. 1 Hausman, NW NE Sec. 30-22-22w .. Drlg. 3,967 ft.

JEFFERSON COUNTY

Wichita Oil Co.'s No. 1 Simpson, NW cor. SW SW Sec. 19-10-17 ..... Rigged up and shut down.

KINGMAN COUNTY

D. P. Fleeger's No. 1 Ashcraft, SE SW NE Sec. 16-28-7w ..... Drlg. 1,910 ft.
White Eagle's No. 1 Lorenz, C NE SW SE Sec. 25-27-5w .. Drlg. 3,100 ft.

LANE COUNTY

Robinson's No. 1 Dickerson, Sec. 11-18-27w ..... 8-in. csg. 2,625 ft.
Blankenship Pet. Co.'s No. 1 Schaeffer, NE cor. NE Sec. 24-16-28w ..... Spudded and shut down.

LYON COUNTY

Harry Mortlock's No. 1 Diebolt, NW NE Sec. 24-20-1 .... Spudding.
Sheedy et al's No. 1 Welch, NE cor. Sec. 30-20-10 ..... Drlg. 2,474 ft.

MARION COUNTY

Marshall et al's No. 1 Higgins, NE cor. Sec. 33-19-5 .... Rig.
White Eagle's No. 1 Ucker, NE NW Sec. 24-17-2 ..... Drlg. 920 ft.
American O. & R. Co.'s No. 1 Urie, NW SW NW Sec. 10-17-3 ..... Drlg. 2,720 ft.
Empire's No. 1 Reising, NE NW NW Sec. 34-20-2 ..... Drlg. 2,645 ft.

McPHERSON COUNTY

Harry Skelly et al's No. 1 Neufeldt, SE NE Sec. 19-21-3w .. Location.
Howard & Travers' No. 1 Cornelius, SW cor. Sec. 7-21-4 .. Drlg. 1,485 ft.
Kansas Oil Co.'s No. 1 Otto, SW NW Sec. 21-20-1w .... Shut down.
Reynolds et al's No. 1 Koohn, NE SE NE Sec. 15-20-2w .. Rig.
McPherson O. & G. Co.'s No. 1 Fisk, SW NE NE Sec. 15-21-2w ..... Drlg. 2,450 ft.
McPherson O. & G. Co.'s No. 1 Sorenson, C SE Sec. 23-18-2w ..... Drlg. 2,240 ft.
Milmac's No. 1 Decker, NW cor. Sec. 11-20-3w ..... Drlg. 867 ft.
Lario et al's No. 1 Diener, SE SW Sec. 10-20-1w ..... Drlg. 2,975 ft.
Perry et al's No. 1 Wade, C SE Sec. 20-19-4w ..... Drlg. 2,985 ft.
Slick, Pryor & Lockhart's No. 1 Gratton, C NE NW NW Sec. 34-20-3w ..... Chat 3,055-3,100 ft.; show oil.
Helmerich & Payne's No. 1 Klassen, SE NE NE Sec. 14-21-1w ..... Drlg. 3,330 ft.
McPherson Gas Co.'s No. 1 Chinberg, NW cor. Sec. 18-19-2w ..... Total depth 3,585 ft.; plugging back to 2,992-3,045 ft.; to test.
McPherson O. & G. Co.'s No. 1 Rasmusson, SW cor. Sec. 8-18-3w ..... Hole full water 3,600-08 ft.; total depth 3,620 ft.; abandoned.
Transcontinental Oil Co.'s No. 1 Algers, NE SW Sec. 1-19-5w ..... Shut down 3,418 ft.

MORRIS COUNTY

Arrow O. & G. Co.'s No. 1 Kinkle, C NW NE Sec. 8-16-7.. Spudding.

MORTON COUNTY

White & Chaney's No. 1 Love, NE cor. Sec. 11-4-24 .... Rig on ground.
Richards et al's No. 1 Colby, C SW Sec. 17-4-21w .... Rig on ground.

NESS COUNTY

E. W. Marland, Inc.'s No. 1 Moses, NE SE Sec. 7-18-25w .. Drlg. 4,016 ft.

OSBORNE COUNTY

Phillips Pet. Co.'s No. 1 Greive, NW SE NE Sec. 6-7-12w .. Underreaming 6-in. csg. 3,472 ft.
Mid-Kansas' No. 1 Boyce, SE cor. NW Sec. 18-6-13w .... Underreaming 8-in. csg. 3,320 ft.

PAWNEE COUNTY

Prairie O. & G. Co.'s No. 1 Black, SW NE NE Sec. 11-20-18w ..... Rig.
F. C. Troupe's No. 1 Lovett, CEL NE NE Sec. 31-21-16w .. Shut down 1,560 ft.

PRATT COUNTY

O'Haver & Jones' No. 1 Garacke, C NE SW Sec. 7-26-14w ..... Drlg. 915 ft.
O'Haver & Jones' No. 1 Lunt, C SW NW Sec. 15-28-14w .. Drlg. 4,650 ft.
Wilcox O. & G. Co.'s No. 1 Unknown, SW NW Sec. 7-26-15w ..... Drlg. 450 ft.

RENO COUNTY

Empire O. & R. Co.'s No. 1 Blitz, NE NW Sec. 36-25-4w ..... Drlg. 2,310 ft.
Wilson et al's No. 1 McPhaeters, C S half NW Sec. 22-26-8w ..... Drlg. 1,810 ft.
Witt's No. 1 Olsen, C SE NW Sec. 14-22-6w ..... Fishing 1,100 ft.

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DETROIT

Skelly Oil Co.'s No. 1 Birkett, NE SW Sec. 30-24-7w ....Drlg. 3,710 ft.
Milmac Oil Co.'s No. 1 Strickley, SW cor. NW Sur. 17-26-5w ....Shut down 3,941 ft.; 5-in. csg.

RICE COUNTY

Boucher's No. 1 Bieg, Sec. 16-21-10w ....Rig.
Miller & Detrick's No. 1 Shumway, C SW Sec. 2-20-9w ..Drlg. 3,095 ft.
Burgher's No. 1 Fair, C SE NE;NE Sec. 14-21-10w ....Rig.
Derby Oil Co.'s No. 1 Johnson, C NW NE SE Sec. 24-20-6w ....Fishing 2,300 ft.
Milmac's No. 1 Cain, C SE Sec. 29-19-7w ....Drlg. 2,755 ft.
Allison & Fitzwilliams' No. 1 Foland, NE cor. SW NE Sec. 36-19-8w ....Abandoned.
Higgins & Steinbuchel's No. 1 Shurr, NE cor. SW Sec. 21-20-10w ....Swabbing 3,278-84 ft.; 150 bbls., completed.
Curtis et al's No. 1 Green, C NW Sec. 33-19-6w ....Location.
Danciger et al's No. 1 Bell, C SW Sec. 16-19-8w ....Rig on ground.
McCullough et al's No. 1 Williams, C NE Sec. 35-20-8w..Rig.

RILEY COUNTY

Arkansas Fuel Oil Co.'s No. 1 Martin, SE NE SW Sec. 24-8-4 ....Spudding.
Grey et al's No. 1 Smith, NE SE Sec. 30-6-6 ....Shut down 1,970 ft.
Derby & Shaw's No. 1 Lindstrom, NE cor. Sec. 32-7-5e ..Shut down 2,246 ft.

RUSSELL COUNTY

Cress & Hacke's No. 1 Unknown, SE cor. Sec. 6-13-12w..Rig on ground.
Midwest Exploration's No. 1 Benson, SW cor. Sec. 4-14-15w ....Drlg. 2,210 ft.
Prairie Oil & Gas Co.'s No. 1 Brungardt, C NW SE NW Sec. 31-12-15w ....Drlg. 2,600 ft.
Empire and Prairie's No. 1 Bocks, C SE NE NE Sec. 23-15-14w ....Testing 3,364-66 ft:; pumped 170 bbls. in 12 hrs.

BOOKS COUNTY

Kruger et al's No. 1 Stels, NW SE SW Sec. 12-9-16w....Shut down 50 ft.
Central Commercial's No. 1 Baxa, Sec. 22-9-17w ....Drlg. 1,891 ft.

RUSH COUNTY

Milmac's No. 1 Mohr, C NW Sec. 11-18-16w ....Shut down 560 ft.
Central Commercial Oil Co.'s No. 1 Brock, SE cor. SW SW Sec. 12-17-16w ....Abandoned 360 ft.
Danciger Oil Ref. Co.'s No. 1 Pivonka, NE cor. SW NE Sec. 17-19-17w ....Drlg. 3,944 ft.

SALINE COUNTY

Dixie Oil Co.'s No. 1 Thorstenburg, NW NE Sec. 10-16-3w ....Drlg. 3,050 ft.
Austin et al's No. 1 Olsen, NW SW SE Sec. 10-15-4w ....Drlg. 2,675 ft.
Templeman's No. 1 Lanbengager, C SW Sec. 20-15-5w ..Fishing 2,965 ft.
Twin Mounds' No. 1 Weis, NW NE NW Sec. 20-13-4w ....Shut down 700 ft.

SEDGWICK COUNTY

Moore's No. 1 Stewart, C NE SE NW Sec. 18-28-1w ....Drlg. 500 ft.
Tavender et al's No. 1 McLean, SE SW SE Sec. 23-26-1w ....Rig.
Wentz Oil Corp.'s No. 1 Allison, NE NW Sec. 24-26-2 ....Fishing 1,555 ft.
Plains Oil Co.'s No. 1 Curry, SE SW SW Sec. 2-27-1w ....Sand 3,389 ft.; made 105 bbls. in 24 hrs.
Wilson et al's No. 1 Ottaway, SW NW Sec. 16-28-2w ....Rig.
C. B. Davis' No. 1 Kinkead, NE cor. Sec. 14-27-1 ....Hole full water 3,397-3,418 ft., abandoned 3,425 ft.
Marland and Amerada's No. 1 Sensorth, NW cor. Sec. 25-28-4w ....Drlg. 3,425 ft.
Boyle's No. 1 Sandusky, NW NE SE Sec. 34-26-1w ....Drlg. 3,255 ft.
Barnett O. & G. Co.'s No. 1 Davidson, NW cor. NW SW Sec. 27-26-1e ....Shut down 3,007 ft.
Kellar & Lewis' No. 1 Buckles, NW cor. SE Sec. 3-28-1w..Fishing 975 ft.
Washabaugh et al's No. 1 Harrison, NW cor. NE NE Sec. 3-26-2w ....Drlg. 3,750 ft.
LaFont et al's No. 1 Carlton, C SE SE SW Sec. 24-28-1e..Shut down 1,635 ft.

SHAWNEE COUNTY

Jenkins & Scott's No. 1 Sherman, NW NE Sec. 28-10-15 ....Rig.
Jenkins & Scott's No. 1 Haden, NE SE Sec. 8-12-14 ....Shut down 750 ft.

SHERIDAN COUNTY

Mandalin O. & G. Co.'s No. 1 Unknown, C SE SW SW Sec. 27-7-26w ....Spudded; shut down

SHERMAN COUNTY

A. L. Henson et al's No. 1 Murry, NE cor. SE NW Sec. 22-7-40w ....Shut down 3,035 ft.

STAFFORD COUNTY

J. H. Dickson's No. 1 Muller, C SW Sec. 11-23-14w ....Spudding.
Phillips Petroleum's No. 1 Houghton, SW cor. Sec. 20-21-12w ....Shut down 50 ft.

STEVENS COUNTY

McKenna's No. 1 Unknown, C NW NW Sec. 29-33-36w..Shut down 50 ft.
Trees Oil Co.'s No. 1 Thompson, C NE SW Sec. 3-35-38w..Drlg. 1,900 ft.
W. Sidwell et al's No. 1 Kelly, SW cor. NE Sec. 16-34-38w ....Shut down 1,600 ft.

SMITH COUNTY

Phillips Pet.'s No. 1 Clydesdale, SE NW Sec. 23-5-14w ..Drlg. 3,010 ft.

SUMNER COUNTY

Kingwood Oil Co.'s No. 1 Stayton, C NE Sec. 18-31-2w ..Drlg. 1,400 ft.
Slick et al's No. 1 Peasel, NW cor. Sec. 33-31-1w ....Drlg. 2,010 ft.
Lario O. & G. Co.'s No. 1 Osborne, NE SE Sec. 21-30-1w ....Drlg. 2,150 ft.
E. K. Carey & Larado Oil Co.'s No. 1 Welsch, SW SE Sec. 9-34-1e ....Drlg. 2,725 ft.
Mid-Continent Pet. Corp.'s No. 1 Clark, SE cor. Sec. 31-34-3w ....Drlg. 4,670 ft.
Shell Pet. Corp.'s No. 1 Armstrong, NE cor. Sec. 12-33-1e.Drlg. 2,990 ft.
Davidson et al's No. 1 Strickland, SW cor. SE Sec. 12-35-1w ....Rig.

TREGO COUNTY

Dixie & Amerada's No. 1 Reitmayer, C NE NE Sec. 19-14-21w ....Drlg. 615 ft.
Prairie Oil & Gas Co.'s No. 1 Kutina, C NE SW NE, Sec. 29-15-21w ....Drlg. 2,600 ft.
Producers & Refiners Corp.'s No. 1 Kingsley, C SE NW NW Sec. 24-14-21w ....Drlg. 700 ft.
Phillips Pet. Co.'s No. 1 Spitz, SE cor. Sec. 24-12-25w ..Drlg. 2,045 ft.
Mid-Kansas' No. 1 Ridgeway, NE SW Sec 28-12-21w ..Drlg. 3,750 ft.
Day et al's No. 1 Gugler, SW NE NE Sec. 36-12-21w ....Shut down 50 ft.
Day et al's No. 1 Unknown, NE NW SW Sec. 2-11-21w ..Shut down 2,910 ft.

WASHINGTON COUNTY

McCool & Vincent's No. 1 Linn, NW cor. NE Sec. 27-4-3..Drlg. 2,500 ft.

WALLACE COUNTY

Morton & Entyre's No. 1 Parker, SE cor. NW SW Sec. 20-13-41w ....Spudded; shut down.

WOODSON COUNTY

Shaffer & Howell's No. 1 Levering, CSL SE Sec. 12-25-14..Drlg. 450 ft.

WILDCAT OPERATIONS IN NEBRASKA

FRANKLIN COUNTY

U. R. Drlg. Co.'s No. 1 Brunkle (twin well), C NW SW NE Sec. 2-3n-13w ....Rig.

CHASE COUNTY

Chase Pet. Co.'s No. 1 Ingold, C NE Sec. 24-6n-38w ....Shut down 4,200 ft.; will run 6-in. csg.

FURNAS COUNTY

Southwestern Pet. Corp. of Nebraska's No. 1 Montague, SE SW SW Sec. 28-1n-22w ....Shut down 1,750 ft.
Graham Bros.' No. 1 Edwards, NW SW Sec. 13-3n-22w ..Drlg. 3,250 ft.

RICHARDSON COUNTY

Norton et al's No. 1 Hauser, NE cor. Sec. 26-1-14 ....Location.

WEBSTER COUNTY

Mid-States Exploration Co.'s No. 1 Platt, C SE one-half Sec. 3-1n-11w ....Shut down 555 ft.

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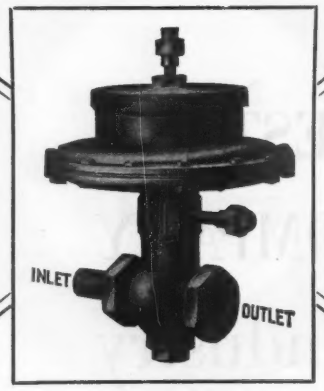

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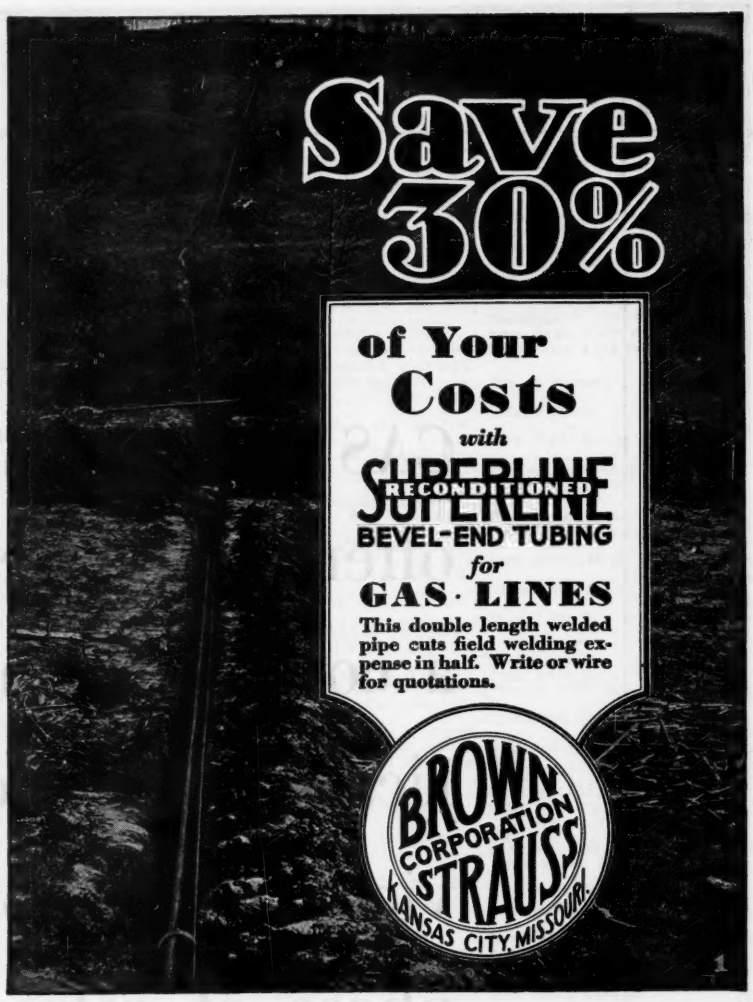

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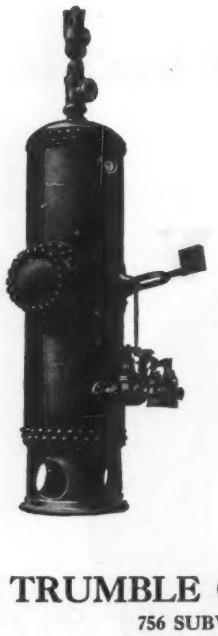

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NEW LOCATIONS IN TEXAS PANHANDLE AND NORTH AND WEST TEXAS FIELDS

TEXAS PANHANDLE

For week ending October 16

Carson County

Pansota Oil Co.'s No. 1 B. F. Block, 330 feet south and west of the NE cor. of the SW of Section 111, Block 4, I.& G.N.

Gray County

Adams Oil Co.'s No. 4 J. S. Morse, 330 feet south and west of the NE cor. of Section 3, Block 26, H.&G.N. Danciger Oil & Refining Co.'s No. 5 J. S. Morse, 330 feet north and east of the SW cor. of the SW of the NW of Section 1, Block 26, H.&G.N. Rieger & Steckoll's No. 1 N. Bohr, Sr., 330 feet north and west of the SE cor. of Section 37, Block B-3, H.&G.N.

NORTH CENTRAL AND WEST TEXAS

For week ending October 16

Archer County

Gilliland & Rosser's No. 2 A. C. O'Donnell, 150 feet south and west of the NE cor. of the west 28 acres of the S half of Section 14, Crawford Subdivision. Hedrick-Camp Drilling Co.'s No. 1 J. T. Harris, 150 feet south and east of the NW cor. of the north 100 acres of Section 4, G. P. Meade Subdivision, 55 Pasture. Perkins & Cullum's No. 1 G. A. Lauster-A, 600 feet north and 500 feet west of the SE cor. of the NE of the NW of Section 2, S.P.R.R., A-1,237. E. J. Stump's No. 1 H. L. and J. F. Ward, 1,800 feet north and 150 feet east of the SW cor. of the west 100 acres of the N half of the B.B.B.&C. Survey, A-36.

Baylor County

Consolidated Oil Co.'s No. 2 W. H. Portwood, 150 feet south and east of the NW cor. of the SW of Section 1,281, T.E.&L.

Brown County

American Maracaibo Co.'s No. 2 F. H. Cross, 450 feet south and west of the NE cor. of the west 25 acres of the F. H. Cross tract and located in the R. Honeycutt Survey No. 623. Baker Brothers' No. 3 A. K. White heirs, 150 feet south and west of the NE cor. of the south 35 acres of the A. K. White estate, 115-acre tract out of the R. Honeycutt Survey No. 623. E. Curry's No. 3 J. H. Prather, 440 feet south and 925 feet east of the SE cor. of the G. B. Gaines 100-acre tract out of the William B. Travis Survey No. 148 and located in the William L. Swain Survey No. 145. Prairie Oil & Gas Co.'s No. 7 E. Williams, 950 feet north and 800 feet east of the SW cor. of the A. May Survey, A-1,288. E. L. Smith Oil Co.'s No. 10 L. A. George, 1,350 feet north and 600 feet east of the SW cor. of the L. A. George tract out of Section 42, H.T.&B. Young Brothers-Alexander & Woodley Petroleum Co.'s No. 13 Kilgore Brothers, 2,750 feet north and 1,700 feet west of the SE cor. of the H. McClure Survey No. 152, A-675. P. French and others' No. 1 A. M. Hays, 400 feet north and 1,350 feet west of the SE cor. of the C.T.R.R. Survey No. 1, A-211. Humble Oil & Refining Co.'s No. 1 L. Martin, 800 feet south and 1,813 feet east of the NW cor. of the S half of Section 11, H.T.&B., being 150 feet south and east of the NW cor. of their 52.7-acre lease. Texcal Oil Co.'s No. 2 W. E. Martin heirs, 150 feet south and 950 feet west of the NE cor. of the W. E. Martin estate 43.5-acre tract out of Section 11, H.T.&B.

Eastland County

Hoffman & Page's No. 3 O. E. Lyerla, 150 feet south and 160 feet west of the NE cor. of the NW of the SW of Section 27, Block 2, H.&T.C. J. E. Lewis & Co.'s No. 3 M. E. Holcomb, 750 feet south and 450 feet east of the NW cor. of the SW of Section 1, Block 4, H.&T.C. Anna Belle Oil Co.'s No. 1 L. E. Murrell and others, 160 feet south and west of the NE cor. of the NE of the SW of Section 29, Block 2, H.&T.C. Lone Star Gas Co.'s No. 1 V. Palmer, 400 feet south and east of the NW cor. of Section 477, S.P.R.R. Same company's No. 3 O. P. Storm, 1,980 feet south and west of the NE cor. of Section 470, S.P.R.R. Texwa Oil Co.'s No. 1 L. A. Hightower, 1,588 feet south and 1,781 feet east of the NW cor. of Section 29, Block 2, H.&T.C.

Callahan County

Mook-Texas Oil Co. and others' No. 2 F. Johnson and others, 200 feet south and east of the NW cor. of the E half of Section 83, Comal County School Land.

Clay County

J. L. Art and others' No. 1 G. W. Byers & Co., 1,167 feet south and 150 feet east of the NW cor. of Section 16, Byers Brothers Subdivision. J. F. Merrick and others' No. 1 G. W. Byers & Co., 1,167 feet south and 164 feet west of the NE cor. of Section 15, Byers Brothers Subdivision.

Coleman County

Diana Oil Co.'s No. 1 J. P. Morris, 150 feet north and west of the SE cor. of the E half of Section 27, William Webber Survey No. 722. Prairie Oil & Gas Co.'s No. 1 J. J. Crowder, 219 feet south and 450 feet west of the NE cor. of the west 90 acres of the south 140 acres of the J. J. Crowder 240-acre tract out of the J. H. Wood Survey No. 483. Tower & McKenna's No. 7 J. J. Crowder, 150 feet north and east of the SW cor. of their 40-acre lease out of the J. H. Wood Survey No. 483. White Eagle Oil & Refining Co. and others' No. 1 C. B. Jameson, 200 feet north and 150 feet west of the SE cor. of the north 40 acres of the east 80 acres of the north 160 acres of the C. B. Jameson 320.96-acre tract out of the J. H. Wood Survey No. 483. Elrod-Bebout & Sullivan's No. 5 L. C. Haas, 900 feet north and 1,850 feet west of the SE cor. of Section 71, Block 1, G.H.&H. Jameson-Pollard & Forrester and others' No. 1 J. H. Hutchings, 150 feet south and east of the NW cor. of the south 40 acres of the NE of Section 11, Block 1, G.H.&H. Robert Oil Corp.'s No. 1 George Rae, 990 feet north and 4,110 feet west of the SE cor. of the J. B. Beall Survey No. 301, A-20.

Cooke County

Lloyd Oil Corp.'s No. 4 D. B. Wheelock, 150 feet north and 830 feet west of the SE cor. of the west 80 acres of the east 120 acres of the C. Underwood Survey, A-1,073. Bridwell Oil Co.'s No. 1 Mrs. S. P. Barrow, 850 feet north and 300 feet east of the SW cor. of the Mrs. S. P. Barrow 167-acre tract out of the M.E.P.&P. Survey, A-1,305. Coline Oil Co.'s No. 4 J. F. Huggins, 150 feet south and 1,050 feet west of the NE cor. of their 56-acre lease out of the S.P.R.R. Survey No. 9, A-982. Kewanee Oil & Gas Co.'s No. 1 Mrs. W. Franklin (Coker), 1,240 feet north and 898 feet west of the most southerly SE cor. of the A. Rodriguez Survey, A-851. Kewanee Oil & Gas Co.'s No. 1 A. M. Pembroke, 150 feet north and east of the SW cor. of the south 60 acres of the A. M. Pembroke 100-acre tract out of the S.P.R.R. Survey No. 23, A-986. R. Ratford and others' No. 1 Mrs. J. G. Jones, 150 feet north and east of the SW cor. of the south 20 acres of the north 60 acres of the Mrs. J. G. Jones tract out of the J. J. Arocha Survey, A-20.

Crane County

Gulf Production Co.'s No. 69 J. T. McElroy, 1,442 feet south and 330 feet east of the NW cor. of the Gulf Production Co.'s lease out of Section 185, Block F, C.C.S.D.&R.G.N.G.R.R. Same company's No. 70 McElroy, 1,442 feet south and 2,970 feet west of the NE cor. of the Gulf Production Co.'s lease out of Section 201, Block 5, C.C.S.D.&R.G.N.G.R.R.

Glasscock County

Shell Petroleum Corp.'s No. 1 Kloh & Rumsey-B, 330 feet south and east of the NW cor. of Section 11, Block 33, T-3-S, T.&P.

Jack County

L. C. Harper's No. 8 J. M. and W. E. Box, 5,300 feet south and 6,100 feet east of the NW cor. of the I. Hughson Sur-

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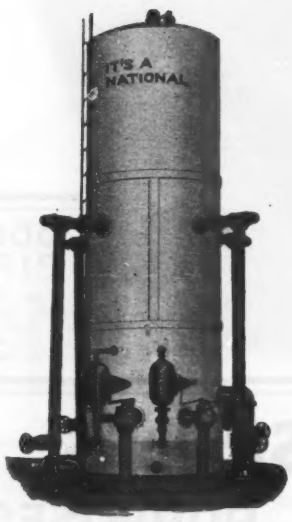

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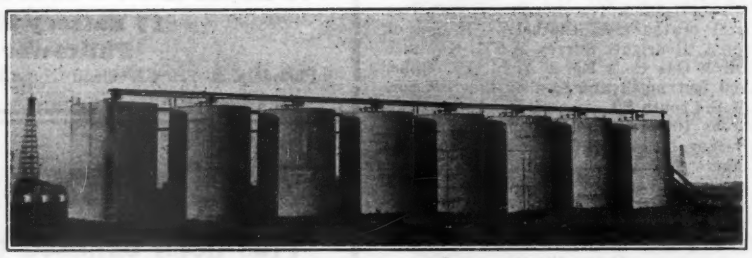
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vey, A-256, being 150 feet south and 200 feet west of the NE cor. of his lease. Shaw Oil Co.'s No. 3 J. M. and W. E. Box, 150 feet north and west of the SE cor. of their 62.7-acre lease out of the I. Hughson Survey, A-256.

Jones County

Cranfill & Reynolds and California Co.'s No. 1 D. L. and C. E. Stephens, 990 feet south and 3,630 feet east of the NW cor. of the D. L. and C. E. Stephens 1,562-acre tract out of the McMullen & McGloin Survey No. 337, A-257.

Montague County

G. L. Pace's No. 1 Mrs. L. A. Cobb-A, 150 feet south and west of the NE cor. of the west 100 acres of the east 160 acres of the Mrs. L. A. Cobb 280-acre tract out of the R. H. Grimes Survey, A-300.

Palo Pinto County

Rodgers & Rider's No. 1 Mrs. S. N. Rider, 150 feet north and west of the SE cor. of the SE of the SE of Section 2,005, T.E.&L.

Pecos County

Anna Belle Oil Co.'s No. 1 R. G. Hollingsworth, 150 feet north and west of the SE cor. of the NW of Section 24, Block 11, H.&G.N. Cornelius Brothers and others' No. 1 Cordova Union Oil Corp., 2,490 feet south and 1,515 feet east of the NW cor. of Section 29, Block 11, H.&G.N.

Landreth Production and Henshaw Brothers' No. 1 University-E, 330 feet north and west of the SE cor. of the W half of the NE of Section 13, Block 18, University Land. Same company's No. 2 University-E, 330 feet south and east of the NW cor. of the W half of the NE of Section 13, Block 18, University Land. Mazda Oil & Gas Co.'s No. 1 Cordova Union Oil Corp., 2,310 feet south and 990 feet west of the NE cor. of Section 103, Block 11, H.&G.N. The Texas Company's No. 1 C. Graef, 2,329 feet west of the NE cor. of Section 44½, Block 12, H.&G.N. Anderson & Prichard's No. 1 V. B. Wright estate, 330 feet south and east of the NW cor. of Section 9, Block 131, T.&St.L.

Shackelford County

R. H. Caperton's No. 1 J. H. Todd, 655 feet south and 155 feet east of the NW cor. of Section 1,566, T.E.&L. Ducker and Navarro Oil Co.'s No. 1 J. B. Matthews, 1,170 feet south and 2,050 feet east of the NW cor. of Section 56, Block 10, E.T.R.R. Dull Earls Texas Co.'s No. 3 Matthews-B, 150 feet south and 450 feet west of the NE cor. of the NE of the SE of Section 32, Block 10, E.T.R.R. Frizzell & Smalley's No. 1 F. W. Alexander, 1,050 feet northeast of the SW line and 783 feet northwest of the SE line of Section 580, T.E.&L. Merry Brothers-Perini and Tidal Oil Co.'s No. 1 W. Y. and R. A. Davis, at the center of the NW of the SE of Section 14, Block 12, T.&P. Tannehill and others' No. 6 Matthews, 150 feet north and 520 feet east of the SW cor. of the east 160 acres of Section 34, Block 10, E.T.R.R. Tannehill and others' No. 27 W. P. Newell, 1,843 feet north and 2,152 feet west of the SE cor. of Section 11, Block 11, T.&P. Van Zant & Eldridge's No. 2 W. J. Dodson, 450 feet north and 150 feet east of the SW cor. of the SE of Section 1, Blind Asylum land.

Stephens County

R. E. Grace and others' No. 1 E. H. Allison, 150 feet north and west of the SE cor. of Section 2,243, T.E.&L.

Upton County

Dixie Oil Co.'s No. 32 A. S. Burleson, 330 feet south and 1,650 feet west of the NE cor. of the John Nidever Survey No. 2, A-749. Texas Pacific Coal & Oil Co.'s No. 15 J. F. Lane-A, 330 feet north and 1,650 feet west of the SE cor. of Section 5, G.C.&S.F., A-213

Ward County

Gulf Production Co.'s No. 7 O'Brien and others, 330 feet north and east of the SW cor. of Section 22, Block F. Gunter & Munson, Maddox Brothers & Anderson Survey. Shipley and others' No. 5 S. F. Hayzlett, 1,980 feet NE of the SW line and 220 feet NW of the SE line of Section 17, Block 5, H.&T.C.

Wichita County

Panhandle Refining Co.'s No. 11 T. L. Burnett and others-A, 150 feet south and west of the NE cor. of the SE of Section 6, S.A.&M.G., A-464. Stump & Co. and others' No. 1 J. L. and T. J. Waggoner, 450 feet north and east of the SW cor. of Lot 13, Section 8, G.H. &H., A-748.

Taylor County

Condor Petroleum Co.'s No. 1 F. Brookerson, 200 feet north and 765 feet west of the most easterly SE cor. of the A. M. Boyd Survey No. 112.

Young County

G. P. Chandler and others' No. 1 F. M. Cullers, 500 feet north and 150 feet west of the SE cor. of the SW of the SW (A-2,177) of Section 2, C.T.R.R. Continental Oil Co.'s No. 10 R. Campbell-B, 2,476 feet south and 150 feet east of the NW cor. of Section 1.390, T.E.&L. Goldsmith & King Royalty Co.'s No. 2 H. O. Kunkel, 450 feet south and 150 feet east of the NW cor. of the S half of the west 80 acres of the H. O. Kunkel 252-acre tract out of the G. W. Stell Survey A-256. Harland & Carter's No. 1 M. Barrett, 150 feet south and east of the NW cor. of the east 69 acres of the north 109 acres of the south 169 acres of the M. Barrett 225-acre tract out of the Edward W. Sergeant Survey A-253. W. L. Hawkins and others' No. 7 J. C. Owen, 1,750 feet north and 2,450 feet west of the SE cor. of Section 1, B.B.B.&C., A-35, being 750 feet south and 150 feet west of the NE cor. of their lease. Madden & Hunt's No. 1 O. Deitrich, 150 feet south and east of the NW cor. of the north 15 acres of the O. Deitrich 150-acre tract out of the G. W. Stell Survey A-256. J. J. Moran and others' No. 1 M. A. Hoffman, 1,354 feet northwest of the SE line and 150 feet northeast of the SW line of the southeast 100 acres of the NE 240 acres of the P. Averett Survey A-2. Panhandle Refining Co.'s No. 1 D. W. Ward, 450 feet north and east of the SW cor. of the SE of the SW A-1.686 of Section 1, Gal. Br. & Nav. Co. Sur. A. H. Parks and others' No. 6 O. R. Carpenter, 1,000 feet north and 600 feet east of the SW cor. of the W half of the O. R. Carpenter 100-acre tract out of the Edward W. Sergeant Survey A-253. A. H. Parks and others' No. 1 F. M. Cullers, 150 feet south and west of the NE cor. of the SE of the SW (A-2,177) of Section 2, C.T.R.R. Perkins & Cullum's No. 4 J. L. Lemmond, 1,750 feet north and 2,150 feet west of the SE cor. of Section 1, B.B.B.&C., A-35. Riggs & Williams' No. 1 R. E. Senkel, 150 feet north and 1,434 feet west of the SE cor. of Section 1917, T.E.&L. Trinity Oil Co.'s No. 2 E. Barrett-A, 1,270 feet north and 870 feet east of the SW cor. of the E. Barrett 125-acre tract out of the Edwards W. Sergeant Survey A-253.

Corrections

In Archer County: Goldsmith and others' No. 1 Otto Deitrich, 150 feet north and west of the SE cor. of the east 11 acres of the north 31 acres of the NE of Section 4, B.B.B.&C., A-1,150.

In Cooke County: Danciger Oil & Refining Co.'s No. 8 J. F. Huggins, 450 feet south and 1,350 feet west of the NE cor. of their 76-acre lease out of the S.P.R.R. Survey No. 9, A-982.

In Terrell County: Keck-Pecos Trust Co.'s No. 1 Hamilton, at the center of Section 6, Georgetown Railway Survey.

In Wilbarger County: Fain-McGaha Oil Corp.'s No. 13 Waggoner-L, 655 feet north and 205 feet west of the SE cor. of their 200-acre lease out of Section 31, Block 4, H.&T.C. Same corporation's No. 18 W. T. Waggoner-W, 790 feet north and 275 feet east of the SW cor. of their lease "W" out of Section 32, Block 4, H.&T.C.

In Young County: Transcontinental Oil Co.'s No. 1 W. A. Corbett, 150 feet south and 360 feet east of the NW cor. of the Ruthy Campbell Survey A-2.297. T. G. Shaw and others' No. 1 T. J. Pickard, 1,672 feet north and 150 feet west of the SE cor. of the T. H. Wooley Survey A-1,654. (Formerly Shaw & Singleton.)

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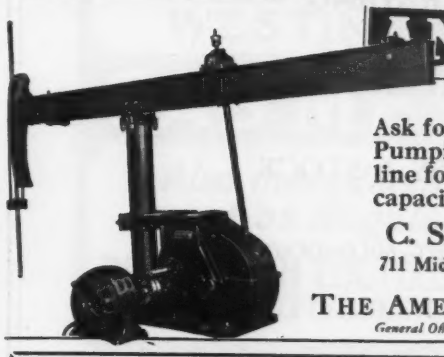

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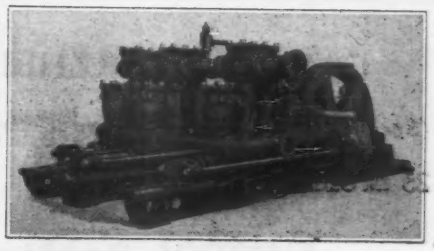

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NOTICE

OUR attention has been called to the fact that certain manufacturers appear to be marketing, or planning to market, an orifice device for the measurement of gas, air, water or oil, which infringes U. S. Patent No. 1569305 issued to Anson Robinson, January 12, 1926. This patent broadly covers orifice fittings and is owned by the Robinson Orifice Fitting Company.

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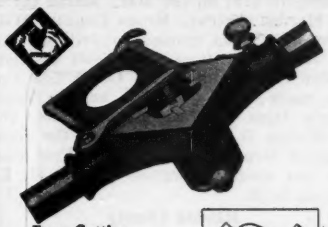

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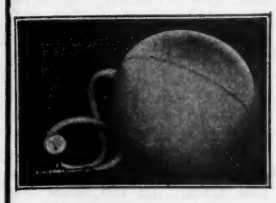

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COMPARATIVE SURVEY OF GAS PRODUCTION

Large increases in the volume of natural and manufactured gas purchased by public utility companies are shown in a comparative survey of gas company statistics for the first half of 1929 made by the American Gas Association. Contrasted with declines in water gas and retort coal gas production, and with a fairly sizeable gain in coke oven gas production, a trend away from gas production by the utilities themselves is clearly indicated. There is also abandonment of other methods of artificial gas production in favor of coke oven production and natural gas.

The reports of 91 companies for the first half of 1929, compared with the same period of last year, show a 7.7 per cent decrease in water gas production; a 11.4 per cent decrease in retort coal gas production; a 36.2 per cent increase in coke oven gas production; a 25.5 per cent increase in quantity of coke oven gas purchased from steel and coke companies operating by-product coke oven plants; and a 51 per cent increase in natural gas purchase.

In the New England states there was a 92.4 per cent increase in coke oven gas purchased in the first half of 1929, while total gas produced fell off 11.2 per cent. In the Middle Atlantic states coke oven gas manufactured increased 57.7 per cent and coke oven gas purchased gained 24 per cent, with total gas produced off 1.5 per cent. In both these sections there was no natural gas distribution for the periods considered. The Middle Atlantic group comprises New Jersey, New York and Pennsylvania.

The South Atlantic states (Delaware, District of Columbia, Florida, Maryland and Virginia) show an increase of 22.6 per cent in coke oven gas purchased and a decline of 7.7 per cent in gas produced. The Pacific Coast states (California, Oregon and Washington) show a 15.4 per cent gain in gas produced, a 24.7 per cent gain in natural gas purchased and a total gain of 21.7 per cent in gas purchased and produced.

The figures show that the Pacific Coast is by far the largest user of natural gas, so far as the 91 companies reporting to the American Gas Association are concerned, with 38,503,255,000 cubic feet purchased in the first half of 1929, against 47,691,845,000 cubic feet purchased by all 91 companies in the period. Only two of five reporting companies distribute natural gas in California.

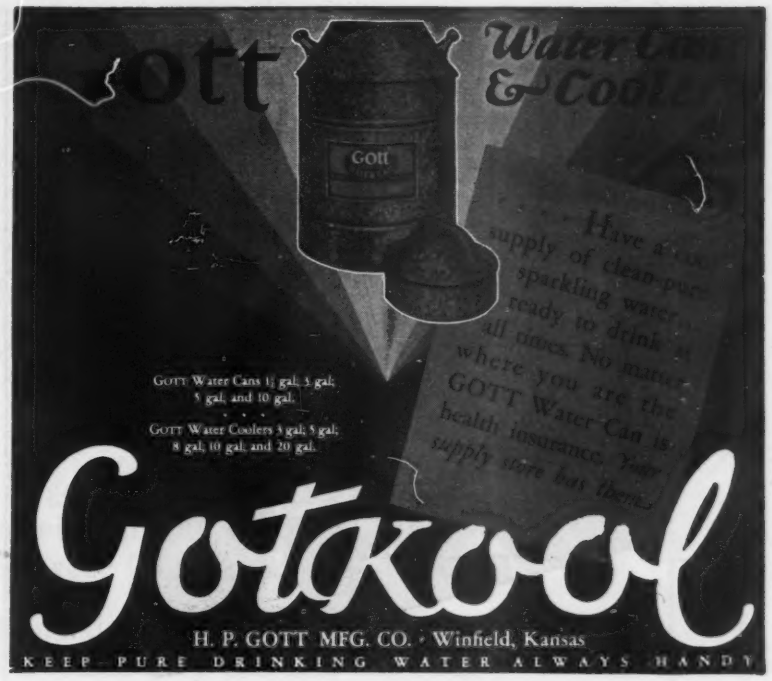
So far as coke oven gas purchases are concerned, the East North Central states lead with 23,997,871,000 cubic feet of coke oven gas purchased from nonutility companies, with the Middle Atlantic states second with 13,042,737,000 cubic feet, followed by New England and the South Atlantic states.

Water and coal gas production showed Middle Atlantic states leading with 52,129,215,000 cubic feet, East North Central states second with 32,236,208,000 cubic feet and New England third with 11,742,510,000 cubic feet in the first half of the year.

The relative position this year of the various methods of gas production or purchase, contrasted with the production in the first half of 1928, shows water gas production still in the lead despite a 7.7 per cent decline, with natural gas purchased ahead of coke oven gas purchased, despite large gains in both. The following table shows the production and purchases for 1928 and 1929:

(Millions of cubic feet)

First half of—	1929	1928
Water gas produced	93,623	101,451
Natural gas purchased	47,692	31,587
Coke gas purchased	47,008	37,459
Coke gas produced	19,910	14,616
Coal gas produced	18,028	20,354
Oil gas produced	17,332	15,047
Total gas produced	148,894	151,468
Total gas purchased	94,700	69,046
Grand total	243,592	220,514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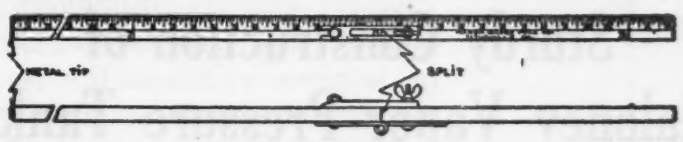

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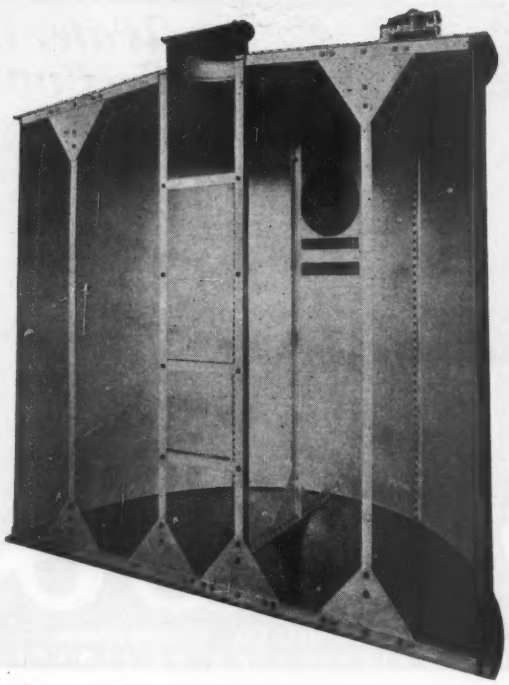

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EASTERN FIELDS

(Continued from Page 80)

On Sugar Camp Run of Reedy Creek, Reedy district, Roane County, the Heck Oil Co. has completed in the Berea grit a second test on the W. H. Enoch heirs' farm. The location is 600 feet north of the same company's test on the H. W. Allen farm. It is good for 50 bbls. a day.

Gassers in Gilmer County

In Glenville district, Gilmer County, the Pittsburgh & West Virginia Gas Co. has completed in the Big Injun sand a gasser on the John W. Wolf farm. In the same district and same formation, the same company has a gasser at a second test on the C. P. Snider farm. In Center district, Calhoun County, Snodgrass Brothers have a gasser on the Umstead-Jackson farm.

On Flint Run, Clay district, Wirt County, Joseph L. Andrews has completed and shot No. 8 on the Lenora Rex farm. It is a light pumper in the Salt sand. In Ten Mile district, Harrison County, the Conservative Gas Co. has started to drill on the Lois Rodgers farm.

Shooting Helps

In Geary district, Roane County, the Heck Oil Co. has shot in the Berea grit its first test on the W. H. Enoch heirs' farm, increasing its production to 75 bbls. a day. In the same district, the same company has shot in the same formation a test on the W. H. Allen 34 acres increasing its production to 100 bbls. a day.

The Garrett Lyons Gas Co. is drilling to the lower sands its test on the Ferdinand Rodgers farm, in Ten Mile district, Harrison County. It was formerly a gasser in the 50-foot sand. On McFarlan Creek, Murphy district, Ritchie County, the South Penn Oil Co. has a rig completed on the E. Bickerstaff farm.

In Geary district, Roane County, the Virginian Gasoline & Oil Co. has made a location on the John Hunt farm. In Elk district, Kanawha County, the same company has made a location on the Wise-McCabe farm. In Jefferson district, Lincoln County, the Coal River Oil Co. is drilling on the A. J. Reynolds farm.

On the right fork of Reedy Creek, Reedy district, Wirt County, Roy Evans & Co. completed in the Berea grit a test on the Courtney heirs' farm. It is a 10-bbl. pumper. In Geary district, Roane County, the United Fuel Gas Co.'s No. 2,537 on the Brown, Swan & Goshorn tract is a gasser in the Big Injun sand. In Walton district, same county, the same company has completed No. 3,954 on the B. K. Littlepage farm. It is a gasser in the Big Injun sand In Center district, Calhoun County, W. H. Bickel has a Big Injun sand test on the Ida and Frank Johnson farm.

In DeKalb district, Gilmer County, McCall & Co.'s test on the J. W. Cunningham farm is a duster in the Big Injun sand. In the same district, the Hope Construction & Refining Co. has a 10-bbl. pumper in the Big Injun sand at No. 1,119 on the Wilt heirs' farm.

Starting New Work

On Little Cove Creek, Troy district, Gilmer County, C. Bennett and others have the rig completed on the Henry Lewis Lamb farm. On Bear Branch of Breden Creek, Harvey district, Mingo County, the Red Jackett Oil & Gas Co. has completed a rig for No. 8 on its own property. In Clay district, Monongalia County, the Hope Construction & Refining Co. has started to drill to the lower sands an old well on the Ruth E. Stevens farm. It was formerly a producer in the Big Injun sand. In Center district, Calhoun County, W. H. Bickel has a rig completed on the G. H. Bailess farm. On Big Root Creek, Sheridan district, Calhoun County, Ira Haught and others have a rig up on the Alva Elder farm. In Center district, C. S. Morris & Co. have a rig completed on the Sarah E. Kerdey farm.

In Church district, Wetzel County, the Maxon Oil Co. is rigging up on the Sarah Shea farm. In Sardis district, Harrison County, Hawthorne & Lancaster have started to drill on the Mary Marsh farm. In Harden district, Mingo County, William Floyd has started to drill on the G. W. Masser farm. In Scott district, Boone County, the Celia Oil & Gas Co. has made three locations on the John Toney farm. In the same district, W. E. Kirtley is building a rig on the John Murray farm. The Thomkins Fuel Gas Co. has made a location on the H. L. Morris farm.

Ritchie County

In Grant district, Ritchie County, Park Bowser has started to drill on the H. C. Cunningham farm. Rexroad & Co. are building a rig on the J. W. F. Cain farm. In the same district, G. W. James has started to drill on the H. S. Wilson farm. In the same locality, David French & Co. have a rig up on the B. F. Gilmore farm. In Murphy district, Ritchie County, Pope Brothers have a rig up on the H. S. Wilson farm. In Clay district, J. H. Wafner has started to drill on the F. P. Weekly farm. In Grant district, Roberts & Co. have started to drill on the Patrick McCable farm. In Union district, the Renos Oil Co. is drilling on the J. M. Echers farm. In Church district, Wetzel County, the Maxon Oil Co. has started to drill on the Sarah Shea farm.

In Troy district, Gilmer County, C. M. Bennett & Co. have started to drill on the Henry Louis Lamb farm. In Collins Settlement, Lewis County, the Mudlick Oil & Gas Co. has started to drill on the W. C. Harold farm. In the same district, W. W. Chapman & Co. have started to drill on the J. J. Hoover farm. In Union district, Ritchie County, the Central Oil & Gas Development Co. has started to drill on the L. S. Goff farm. In Curtis district, Roane County, the Parsons Oil & Gas Co. has a rig up on the L. B. Bee farm. In the same district, D. W. Law & Co. are building a rig on the L. M. Riddle farm. In Washington district, Jackson County, Thomas A. Harris has started to drill on the Mary Ludwick farm. In Ravenwood district, H. C. Zogg & Co. are drilling on the George A. Delaney farm. In Grant district, same county, D. W. Law & Co. are drilling on the Leroy Kirkhart farm.

Calhoun County

In Sherman district, Calhoun County, C. B. Lewis & Co. have started to drill on the Baptist Church lot. In Lee district, Edward Smith & Co. have started to build a rig on the John Slider farm. In the same district, F. F. McIntosh & Co. have started to drill on the Joann Duskey farm. In the same district, the Hope Natural Gas Co. has a rig up on the M. B. Stone farm. L. P. Bickel has started to drill on the Martha Stump farm. In Center district, George Hamilton & Co. have a rig up on the W. A. Maheney farm. In Center district, Gilmer County. the Carnegie Natural Gas Co. has part of the rig material on the D. Stout farm. In DeKalb district, the White Pine Oil & Gas Co. has a rig up on the H. A. Gainer farm. In Burning Springs district, Wirt County, Edward Nelly & Co. have a rig up on the Edward Nelly farm. In Union district, Ritchie County, Robert Elder & Co. have a rig up on the Charles Iams farm.

SOUTHWEST PENNSYLVANIA

In Aleppo Township, Greene County, the Manufacturers Light & Heat Co. has a light gasser in the Bayard sand at a second test on the J. S. McCormick farm.

GEOLOGIC STRUCTURES

"Geologic Structures" is the name of a new book written by Bailey Willis and Robin Willis of Stanford University, California, and published by McGraw-Hill Book Company, Inc. of New York City. This is a second edition of the book written six years ago, brought up to date and so written as to be of great interest to the layman as well as the practicing geologist. The book is divided into four sections: rock structures, mechanics of rock deformation, methods of attack of field problems, and discussion of major problems of earth dynamics. It sells for $4.

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Oklahoma-Kansas and Eastern Pipe Line Report

OKLAHOMA-KANSAS
Pipe Line Statement for August

Runs

	Month	Dly. av.
Prairie P. L. Co.*	4,882,500	157,500
Gulf P. L. Co.	2,060,981	66,483
Texas P. L. Co.	861,022	27,775
Empire P. L. Co.	2,082,864	67,189
Magnolia P. L. Co.	2,204,970	71,128
Cosden P. L. Co.	849,144	27,392
Sinclair P. L. Co.*	3,162,000	102,000
Oklahoma P. L. Co.	3,392,247	109,427
Other lines	6,758,000	218,000
Total August	26,253,728	846,894
Total July	26,242,489	846,538
Difference	11,239	361

Shipments

Prairie P. L. Co.†	6,929,412	223,529
Gulf P. L. Co.	1,937,604	62,503
Texas P. L. Co.	1,595,403	51,465
Empire P. L. Co.	1,436,083	46,325
Magnolia P. L. Co.	2,393,980	77,225
Cosden P. L. Co.	1,046,281	33,751
Sinclair P. L. Co.†	3,353,206	108,168
Oklahoma P. L. Co.	3,493,038	112,679
Other lines	6,510,000	210,000
Total August	28,695,007	925,645
Total July	28,407,890	916,383
Difference	287,117	9,263

Stocks

Prairie O. & G. Co.*	37,393,000
Gulf P. L. and Gypsy Oil Co.	9,970,852
The Texas Co.	8,158,171
Empire P. L. Co.	4,997,243
Cosden P. L. Co.	3,334,711
Sinclair Crude Oil Pur. Co.*	20,343,000
Magnolia Pet. Co.	9,702,175
Oklahoma P. L. Co.	3,369,176
Carter Oil Co.	10,481,816
Other lines*	10,813,000
Total August	118,563,144
Total July	117,552,865
Difference	1,010,279

*Estimated. †Prairie shipments include Texas crude oil, and Sinclair shipments include Texas and Wyoming crude oil.

Note—Stocks do not include approximately 16,000,000 bbls. of crude oil held in storage on private tank farms and leases.

EASTERN PIPE LINE REPORT

Runs From Wells

In the following table will be found the regular receipts from wells by various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky and Indiana for July and August:

	July, 1929	Aug., 1929
Nat. Transit	268,968.24	307,546.82
S. W. Pa. P. L.	96,958.15	92,216.86
Eureka P. L.	878,139.18	873,176.67
Buckeye P. L. (Macksburg)	852,288.54	834,947.96
Buckeye P. L. (Cleveland)	12,698.84	13,069.95
Buckeye P. L. (Lima, etc.)	141,314.51	130,364.10
Indiana P. L.	5,565.67	5,572.79
Cumberland P. L.	217,391.68	197,780.44
N. Y. Transit	32,169.25	31,452.26
Tidewater P. L.	284,597.46	280,916.87
Pure Oil	164,484.42	207,822.79
Emery P. L.	72,339.64	73,262.76
Paragon Dev.	16,335.33	13,721.38
Stoll Oil Ref.	5,453.55	5,334.49
Total	2,048,704.46	2,067,286.14
Daily average	66,087.24	66,686.65

Note—Indian Refining Co. also reported other receipts of 402,054.35 bbls. Paragon Refining Co. had other receipts of 164,666.55 bbls. Paragon Development had other receipts of 290.08 bbls.

Petroleum Deliveries

The following tables exhibit the shipments or regular deliveries of various pipe lines in New York, Pennsylvania, West Virginia, Ohio and Kentucky for July and August:

	July, 1929	Aug., 1929
Nat. Transit	448,413.13	433,226.88
S. W. Pa. P. L.	492,117.59	360,915.13
Eureka P. L.	268,871.91	282,805.08
Buckeye P. L. (Macksburg)	239,542.25	185,208.11
Buckeye P. L. (Cleveland)	2,190.55	2,185.04
Buckeye P. L. (Lima, etc.)	1,656,505.17	1,593,076.04
Indiana P. L.	1,426,217.69	1,426,167.56
Cumberland P. L.	200,632.22	201,459.97
Southern P. L.	67,284.36	36,341.20
N. Y. Transit	308,215.81	290,004.27
Northern P. L.	173,766.22	192,966.11
Tidewater P. L.	245,185.79	249,359.87
Pure Oil	163,598.14	214,822.99
Emery P. L.	67,577.88	75,477.85
Paragon Ref.	259,400.21	174,796.43
Paragon Dev.	18,142.33	14,507.08
Total	6,037,661.25	5,733,319.61
Daily average	194,762.27	184,945.79

Indian Refining Co. reported other deliveries of 411,582.89 bbls.

Gross Stocks

The gross stocks held by various pipe lines in the oil producing sections of New York, Pennsylvania, West Virginia, Ohio, Indiana and Kentucky at the close of July and August:

	July, 1929	Aug., 1929
Nat. Transit	692,912.76	689,249.61
S. W. Pa. P. L.	579,475.28	551,844.06
Eureka P. L.	1,209,058.70	1,238,075.04
Buckeye P. L. (Macksburg)	431,010.70	434,154.82
Buckeye P. L. (Cleveland)	71,815.43	58,890.03
Buckeye P. L. (Lima, etc.)	2,470,370.27	2,721,519.35
Indiana P. L.	638,128.50	668,771.87
Cumberland P. L.	559,326.34	556,916.14
Southern P. L.	417,168.75	399,390.51
N. Y. Transit	235,029.71	201,133.36
Northern P. L.	416,713.78	433,716.68
Tidewater P. L.	1,109,732.21	1,028,430.16
Pure Oil	17,189.77	16,303.76
Emery P. L.	12,197.88	10,275.09
Paragon Ref.	22,399.32	11,989.49
Indian Ref.	59,096.91	50,525.66
Paragon Dev.	4,897.15	4,645.76
Tuscarora	265,071.90	264,809.29
Total	9,211,595.35	9,440,642.59
Decrease	290,330.30	229,047.24

Grades of Oil

The following table shows the amount of the different grades of oil held by the eastern pipe lines at the close of July and August showing the gross stocks of the above fields:

	July, 1929	Aug., 1929
Pennsylvania	3,230,774.85	3,279,178.01
Lima	701,522.62	648,102.35
Kentucky	780,445.07	767,210.90
Mid-Continent	4,226,436.12	4,457,893.11
Illinois	272,416.63	288,258.19
Total	9,211,595.35	9,440,642.59

Daily Average Runs

The following table shows the daily average runs of the Pennsylvania, Lima and Kentucky oil fields for the past four years:

	1926	1927	1928	1929
January	55,630	56,209	52,904	51,749
February	60,394	61,298	57,002	51,833
March	61,644	63,247	57,485	54,252
April	63,019	60,927	56,812	58,444
May	60,580	60,284	62,067	59,902
June	61,121	62,757	58,230	58,833
July	63,206	58,674	57,144	66,087
August	61,815	60,870	57,745	66,687
September	64,639	60,285	53,487	.....
October	161,132	147,080	58,100	.....
November	67,774	57,275	53,565	.....
December	58,755	63,089	52,025	.....

Daily Average Shipments

The following table gives daily average shipments from the Pennsylvania, Lima and other fields for the past four years:

	1926	1927	1928	1929
January	156,056	141,227	146,465	165,721
February	159,488	138,534	167,868	159,387
March	150,239	133,777	158,882	161,474
April	152,374	140,227	172,935	169,737
May	160,998	144,594	180,559	184,281
June	160,267	149,772	188,024	185,404
July	160,045	151,850	189,470	194,763
August	151,929	188,653	192,853	184,946
September	158,915	144,213	194,138	.....
October	161,132	147,036	176,000	.....
November	172,608	150,975	176,898	.....
December	136,428	144,504	173,572	.....

Gross Stocks

In the following table will be found the gross stocks of the various lines of the Pennsylvania, Lima and Kentucky oil fields including oil received from other lines, at the close of each month for the past three years:

	1927	1928	1929
January	9,718,008	12,276,710	7,596,564
February	10,119,162	12,180,419	8,738,331
March	10,794,044	12,239,725	9,002,058
April	11,112,295	11,740,125	8,978,172
May	11,359,381	11,602,468	8,903,566
June	11,493,673	11,287,678	8,921,271
July	11,458,128	10,819,331	9,211,595
August	11,989,115	10,236,743	9,440,643
September	12,212,716	9,660,910	.....
October	12,047,661	9,229,709	.....
November	11,939,740	8,366,553	.....
December	12,340,297	7,539,555	.....

Franklin Pipe Co.

The following table exhibits the condition of the Franklin Pipe Line at the close of business for the months named and not counted in the stocks and averages reported above:

	Runs	Shipments	Stocks
1928—			
June	3,153.08	2,779.02	17,932.58
July	2,902.50	3,628.02	17,197.06
August	2,874.11	2,350.13	17,721.04
September	2,820.31	5,255.42	15,285.93
October	1,289.93	538.89	17,551.97
November	2,663.53	788.47	19,426.97
December	3,053.60	3,167.53	19,426.99
1929—			
January	2,099.90	.....	19,313.08
February	2,469.47	4,873.20	17,009.23
March	3,330.82	3,595.01	16,745.04
April	4,864.07	4,243.59	17,365.52
May	2,688.59	2,455.54	17,598.57
July	2,947.62	3,329.35	4,503.44
August	2,742.73	2,889.47	4,356.74

The Illinois Field

The following table gives the report of the Illinois Pipe Line Co. in Illinois:

Gross stocks, September 1	2,386,943.46
Runs from wells	598,667.57
Other receipts	431,730.34
Regular deliveries	707,229.51
Other deliveries	293,919.13

The amount of Illinois oil run by the Tidewater Pipe Co. in August was 26,684.42 bbls. Deliveries were 39,195.51 bbls. Adding these figures to those of the Illinois Pipe Line Co. makes the runs and deliveries as follows:

	Runs	Deliveries
1928—		
September	570,307.91	727,293.56
October	626,147.64	626,290.46
November	576,232.88	702,589.92
December	584,633.00	491,517.26
1929—		
January	570,727.38	545,084.68
February	517,330.17	503,387.70
March	728,319.67	586,049.66
April	515,374.27	654,297.96
May	608,981.60	673,812.83
June	568,454.70	818,845.97
July	611,106.79	828,159.44
August	625,351.99	746,425.08

Tidewater Pipe Co., Ltd., also delivered in August, 327,478.83 bbls. Oklahoma oil.

AVERAGE DAILY RECEIPTS OF CALIFORNIA OIL AT ATLANTIC AND GULF COAST PORTS

Average bbls per day—	ATLANTIC PORTS: Baltimore	Boston	New York	Philadelphia	Others	Total	GULF COAST PORTS: Galveston	New Orleans Baton Rouge	Port Arthur Sabine Pass	Tampa	Total	Total all ports
January	15,838	.....	16,676	11,838	7,938	52,290	.....	.....	.....	.....	5,161	57,451
February	14,214	...	38,750	17,250	11,607	81,821	.....	.....	.....	.....	3,750	85,571
March	19,903	968	31,258	15,581	7,355	75,065	.....	.....	.....	.....	.....	75,065
April	16,667	....	32,333	13,233	2,234	64,467	.....	.....	.....	.....	7,333	66,200
May	16,226	2,416	31,336	10,806	2,129	62,903	.....	...	.....	.....	.....	62,903
June	14,866	3,167	33,100	10,300	6,100	57,533	.....	.....	.....	.....	.....	57,533
July	15,387	4,806	34,290	19,383	2,452	76,323	.....	.....	.....	.....	4,161	80,484
August	20,389	3,129	35,226	15,903	5,548	83,194	.....	.....	.....	.....	12,161	95,355

AVERAGE DAILY IMPORTS OF PETROLEUM AT PRINCIPAL UNITED STATES PORTS

Average bbls per day—	ATLANTIC PORTS: Baltimore	Boston	New York	Philadelphia	Others	Total	GULF COAST PORTS: Galveston	New Orleans Baton Rouge	Port Arthur Sabine Pass	Tampa	Total	Total all ports
January	11,936	8,903	130,065	34,871	15,709	201,484	.....	34,808	4,098	1,287	40,193	241,677
February	13,750	15,071	135,179	32,750	17,893	214,643	.....	34,357	821	143	35,321	249,964
March	18,548	26,064	146,516	39,162	28,162	257,452	.....	42,581	2,322	.....	44,903	302,355
April	19,733	18,367	127,233	40,267	22,567	248,167	6,867	25,066	10,367	1,500	43,800	291,967
May	29,806	19,258	138,000	49,936	22,822	259,322	6,677	26,323	3,000	1,323	37,323	296,645
June	31,433	8,667	134,600	42,967	15,300	235,967	8,600	22,633	11,800	2,033	45,066	281,033
July	40,097	15,129	111,677	43,420	31,516	241,839	4,774	12,097	9,516	161	26,548	268,387
August	33,387	14,355	162,644	30,936	20,355	261,677	4,226	12,742	.....	1,484	18,452	280,129

GROSS PRODUCTION IN THE UNITED STATES FOR 12 MONTHS (REVISED)

(In barrels of 42 gallons)

1928-29		California	Oklahoma	Texas	Kansas	Arkansas	Louisiana	Rocky Mts	Eastern	Total
September:	Month	18,908,169	32,456,860	31,564,269	8,047,350	3,540,070	1,830,235	3,422,430	3,229,000	75,998,273
	Daily average	630,272	748,563	718,207	101,575	84,669	61,007	81,047	104,200	2,533,279
October:	Month	19,430,993	33,431,071	32,176,853	8,058,460	3,652,484	1,826,221	3,571,322	3,612,000	78,769,903
	Daily average	626,806	755,841	715,374	98,660	85,564	59,233	82,962	116,516	2,540,964
November:	Month	19,907,526	32,078,650	30,791,795	8,977,800	3,476,080	1,801,914	3,388,370	3,348,000	75,770,665
	Daily average	663,584	735,956	693,059	99,286	82,526	60,064	79,629	111,600	2,505,685
December:	Month	21,574,703	32,425,722	32,180,102	8,988,400	3,521,571	1,846,841	3,389,040	3,581,000	79,407,279
	Daily average	695,958	722,416	715,487	96,400	81,241	59,576	73,240	115,516	2,561,528
January:	Month	23,235,929	32,575,874	33,413,226	8,861,641	3,453,526	1,807,887	3,076,079	3,439,000	82,012,163
	Daily average	764,385	738,264	755,233	92,311	79,146	58,318	66,970	110,936	2,646,554
February:	Month	23,390,707	30,464,164	30,816,209	8,557,965	3,154,194	1,569,930	1,965,656	4,113,000	74,941,225
	Daily average	796,454	730,863	743,484	91,356	76,926	56,068	70,202	111,184	2,676,473
March:	Month	24,324,729	30,838,262	34,358,592	8,951,076	3,803,724	1,756,153	3,195,828	3,586,000	82,314,364
	Daily average	784,669	672,202	784,669	95,196	74,314	56,650	70,838	115,677	2,655,302
April:	Month	23,295,060	30,326,298	33,493,097	8,112,740	3,188,680	1,702,475	3,085,930	3,524,000	79,636,270
	Daily average	776,502	674,513	783,101	103,753	72,956	56,750	69,501	117,467	2,654,543
May:	Month	24,053,351	31,345,453	34,489,101	8,665,099	3,220,158	1,713,261	3,252,522	3,879,000	83,617,945
	Daily average	775,915	688,563	789,968	118,229	71,618	55,267	72,662	125,129	2,697,353
June:	Month	24,624,627	30,561,112	34,698,029	8,636,150	3,112,270	1,699,581	3,180,753	3,887,000	83,299,521
	Daily average	820,821	685,371	823,267	121,206	70,337	56,653	72,692	129,567	2,779,984
July:	Month	26,796,627	32,371,935	36,969,989	8,867,157	3,137,047	1,716,488	3,360,836	4,439,200	90,659,730
	Daily average	864,407	721,675	869,997	124,747	68,937	55,370	76,156	143,200	2,924,489
August:	Month	27,233,353	32,429,492	37,490,489	8,816,555	3,086,083	1,764,973	3,478,016	4,340,000	91,638,961
	Daily average	878,495	733,532	886,787	123,115	67,293	56,934	79,936	140,000	2,956,092
	Total 12 Months	275,535,789	381,212,905	382,420,754	38,540,296	37,845,887	21,045,953	37,276,867	43,977,200	978,166,645

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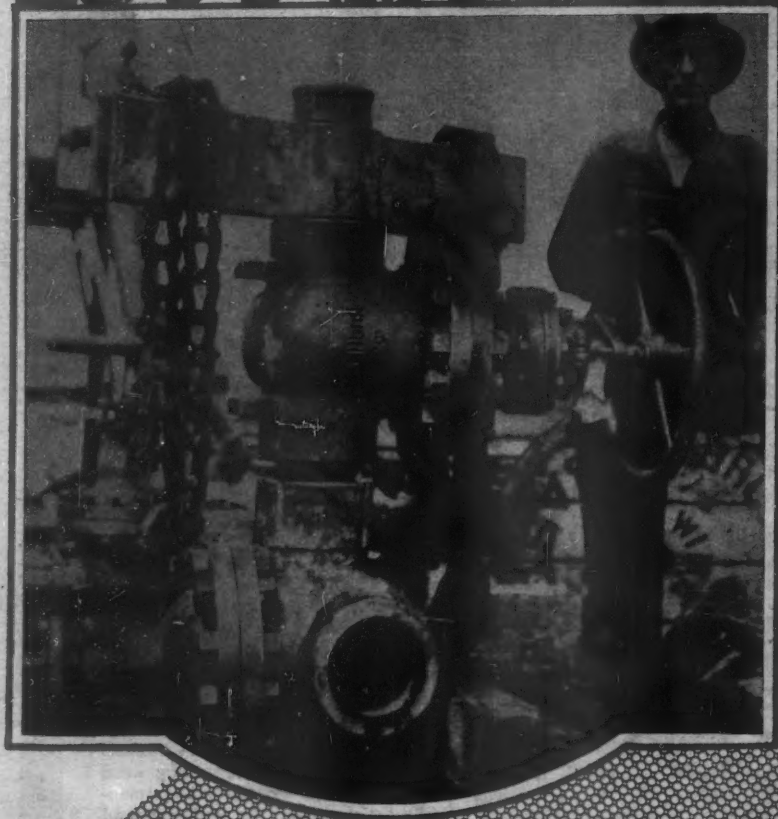

Valves have been opened and closed many times with ease.

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The photograph shows the hook-up on Cromwell-Franklin's No. 1 Trosper Park well, Oklahoma City Field.

The hook-up is all Hughes material and consists of the following:

2—6¼", 5000 lb. test Hughes Drilling Valves.
2—6", 5000 lb. test manifold valves.
2—4", 5000 lb. test manifold valves.
2—6¼", 3000 lb. test, Type "Z" Crosses.

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